[From Schurigio: Lithologia Historico-Medica, Dresden, 1744.]

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THE PNEUMATIC INSTITUTION OF THOMAS BEDDOES AT CLIFTON, 1798*

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THREE rivers in England share the name, Avon. The East Avon passes Salisbury and flows into the English Channel. The Upper Avon, immortalized by Shakespeare, flows by Stratford and joins the Severn to enter Bristol Channel. The Lower Avon is navigable for large vessels as far as Bristol. Four miles below Bristol, at Clifton, it enters a picturesque gorge whose high walls confine its course until it emerges into Bristol Channel. From the time of the Roman occupation of Britain, Clifton, from its hot mineral springs, has been celebrated as a health resort. At Clifton, in 1798, with the purpose of treating disease by the use of factitious airs, Thomas Beddoes founded the Pneumatic Institution. The cures expected from the inhalation of factitious airs did not materialize. The Pneumatic Institution was an acknowledged failure. Late in life, Thomas Beddoes bewailed his lot, "as one who has scattered abroad the *avena fatua* of knowledge, from which neither branch nor blossom nor fruit has resulted."

Today, looking back over the lapse of a hundred and thirty years, we can see that no other event in the history of nations has so influenced modern civilization as did the work of the Pneumatic Institution at Clifton. Without this link in the chain of scientific progress, we might today lack all the applications of chemical knowledge to medicine and many of the physical aids to diagnosis and treatment of disease, including surgical anesthesia and the *x*-ray. We might also be without the aniline dyes, the electric light, the electric motor, and the gasoline engine.

Thomas Beddoes was born at Shiffnal, England, in 1760. At the age of twenty-six, he graduated from the medical department of Oxford University. After two years spent in study on the continent, he returned to

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Oxford and took the position of Lecturer on Chemistry. His lectures were immediately attended by large and enthusiastic audiences, for in addition to personal magnetism and eloquence, Beddoes had the advantage of a subject of popular and timely interest. For a thousand years, alchemy, that black and secret art, originating in ancient Egypt, had dominated scientific thought. The alchemists knew four elements, earth, air, fire and water. For metals, they had gold, silver, copper, tin, iron and lead. All the metals were compounds of quicksilver with sulphur in varying proportions. With the Philosopher's Stone, not only could these proportions be varied at will and the baser metals transmuted into gold but life could be indefinitely prolonged. After a thousand years' search, the Philosopher's Stone was still unfound.

Fig. 1. Thomas Beddoes, m.d. Frontispiece to "Memoirs of the Life of Thomas Beddoes, m.d." by John Edmonds Stock, m.d. Bristol, 1811.

Within the memory of living men, alchemy had undergone a metamorphosis from which had emerged the infant chemistry. In 1700, Stahl had put forth the theory of phlogiston. To the 18th century scientist, phlogiston was as real an element as oxygen is today. Phlogiston was the substance given up on combustion, the essence of fire. Burn a base metal, iron, for example. Phlogiston escapes and the iron becomes dephlogisticated. Now heat the dephlogisticated iron with wheat, which is known to be rich in phlogiston. The iron regains its phlogiston and assumes its original form. Long after the phlogiston theory had been exploded, its characteristic nomenclature remained. Nitrogen was phlogisticated air; hydrogen, inflammable air; carbon dioxide, fixed air; nitric oxide, nitrous air; nitrous oxide, dephlogisticated nitrous air; ammonia, alkaline air. These were the factitious or manufactured airs, the topics of the new science, pneumatic chemistry, which had developed in England within fifty years. Inflammable air was produced by the action of an acid on zinc. It was almost pure phlogiston. Fixed air was given off when an acid was added to a carbonate. It was produced in great quantities at the breweries and was found in the exhalations of men and animals. Nitrous air was formed when nitric acid came in contact with mercury. It could be dephlogisticated by bringing it in contact with moist iron filings. Natural air was dephlogisticated as it became deteriorated by a burning candle or by the respiration of men and animals. Phlogisticated air later became known as azote because it would not support life. Still later it was known as nitrogen.

Dephlogisticated air was the greatest discovery of Joseph Priestley, an English clergyman. In 1744, with a powerful burning glass, he focused the rays of the sun on some mercuric oxide and evolved the gas which he called dephlogisticated or fire air and which we know as oxygen. Two years earlier he had discovered dephlogisticated nitrous air, later called gaseous oxide of azote and still later known as nitrous oxide. Lavoisier correlated the discoveries of pneumatic chemistry and brought the phlogiston theory into discredit. In his "Elements of Chemistry," published in 1789, he recognized combustion as a form of oxidation but attributed the effects of heat to a subtile, imponderable fluid which he called "caloric." In this period there were also notable discoveries in the field of electricity. In America, Benjamin Franklin flew a kite during a thunder storm and proved that lightning was identical with electricity. In Italy, Volta was building, with alternate strips of silver and zinc, separated by pieces of blotting paper, the galvanic pile, the origin of the electric battery.

Such were the matters which drew throngs to listen to Thomas Beddoes as he lectured on chemistry at Oxford. Then came the French Revolution, with daily alarms echoing across the Channel to England. Lavoisier lost his head on the guillotine. Priestley was attacked for his outspoken revolutionary sympathies. His house was burned, his apparatus and books were destroyed and he wisely took a boat for America. He died at Northumberland, Pennsylvania, in 1804. In such a time of crisis, Thomas Beddoes was not the man to remain silent. He hailed the dawn of French freedom with enthusiasm. He published and circulated pamphlets vindicating the cause of the French revolutionists. A pamphlet published in the Fall of 1792 aroused a clamor at Oxford and excited such prejudice against Beddoes that he soon resigned his position. The following March, he moved to Bristol and opened an office for the practice of medicine in Hope Square. He soon won a large and devoted clientele. He ridiculed the Perkins' tractors, the popular treatment of the time. A pioneer, he applied to medical treatment his wide knowledge of chemistry.

Now that he was free from the labor of his lectureship, a constant succession of books and pamphlets emerged from the office in Hope Square. Scattered copies of these pamphlets are to be found in various collections. In the John Hay Library are "Chemical Experiments and Opinions extracted from a Work published in the Last Century (by John Mahew)" Oxford, 1790, and "A Word in Defense of the Bill of Rights, against Gagging Bills." Bristol, 1795. "The History of Isaac Jenkins" is a novel dealing with the evils of drunkenness. "A Consideration of the Medicinal Uses and on the Production of Factitious Airs" was published in five parts during 1794–96. These were followed by "An Outline of a Plan for Determining the Medicinal Powers of Factitious Airs," 1795, and "Suggestions toward Setting on Foot the Projected Establishment for Pneumatic Medicine," 1797. Beddoes' interest had gradually become centered on the foundation of a Pneumatic Institution for the treatment of disease by inhalation. From his chemical studies he had gained the idea that the newly discovered gases: nitrogen, oxygen, nitric oxide, nitrous oxide, hydrogen and ammonia might be valuable remedial agents. By 1798, great interest in the project had been aroused and sufficient funds had been obtained by subscription. The site chosen was at the Hot Wells of Clifton. A laboratory was opened and plans were completed for a hospital of ten beds with provision for eighty out-patients. Beddoes was now in need of an assistant to take charge of the work in the laboratory.

Fig. 2. Sir Humphry Davy. From "The Life of Sir Humphry Davy, Bart. ll.d. by John Ayston Paris, m.d. Canterb. f.r.s.&c." London, 1831.

At Penzance, in the most remote part of Cornwall, Humphry Davy, aged nineteen, son of a wood-carver, industriously studied the new chemistry. He would attend medical lectures at Edinburgh and return to practice medicine in his native town. With little access to scientific books and appliances he had already written a thesis bearing the imposing title: "Experimental Essays on Heat, Light, and the Combinations of Light, with a new Theory of Respiration and Observations on the Chemistry of Life, by H. Davy." This thesis overthrew the caloric theory of Lavoisier and introduced heat and light in their true aspect as forms of vibration. In the introduction he said: "If we except the theories of a celebrated medical philosopher, Dr. Beddoes, it will be found that chemistry has as yet afforded but little assistance in the cure of diseases or in the explanation of organic functions." Of this thesis he made a careful copy which he sent, for criticism, to Thomas Beddoes at Bristol.

With the avowed object of settling a disputed point concerning the geology of the section, Beddoes promptly set out for Penzance. He sought out young Davy and proposed, first, to publish the thesis bearing the imposing title in a volume which he was collecting, "Contributions to Physical and Medical Knowledge," and next, that Davy should come to Bristol as Superintendent of the Pneumatic Institution. With his personal charm and eloquence, Beddoes argued that a few years in his laboratory would be time well spent in preparation for a medical career. The argument prevailed and on October 2, 1798, Davy took up the work as assistant at the Pneumatic Institution. On that day medicine lost a country practitioner and chemistry gained its most distinguished disciple.

The Pneumatic Institution soon became the scene of great activity. Apparatus was devised, gases were prepared, condensed by pressure, rarefied by heat, tested and administered to patients. Oxygen was found to be beneficial in scrofulous affections, white swellings, ulcers, in chlorosis, dyspepsia, hypochondriasis, melancholia and cephalalgia. It was efficacious in dropsy, in hydrothorax, in nausea, dyspnea and asthma. It was efficient in opium poisoning and advantageous in paralysis. It was valuable in simple exhaustion. In apoplexy it was harmful. Carbon dioxide was found to be an anodyne when applied externally. At one time it appeared to produce interesting results in the treatment of cancer. The inhalation of hydrogen produced vertigo. It seemed to be beneficial in catarrh and in asthma. Hydrocarbonate, the equivalent of modern illuminating gas, was found to be a powerful sedative and to be effective in hemoptysis.

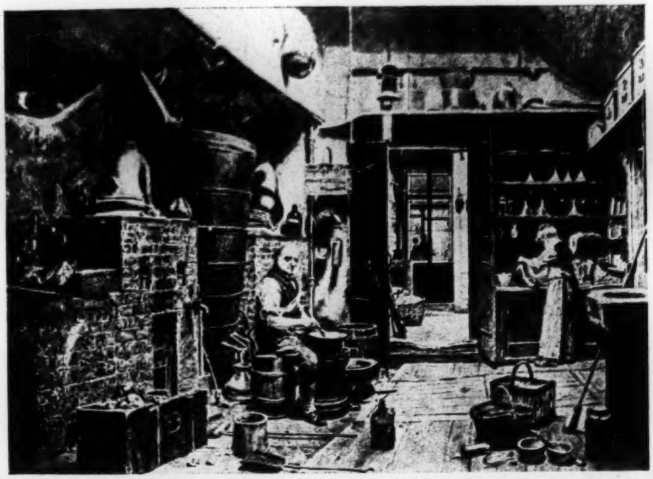

FIG. 3. THE LABORATORY. FROM A CONTEMPORARY ENGRAVING REPUTED TO REPRESENT THE LABORATORY OF HUMPHRY DAVY.

The greatest interest at the Institution was aroused by the unsuspected properties discovered in nitrous oxide gas. On April 17, 1799, Davy wrote to William Nicholson at London: "I have this day made a discovery which, if you please, you may announce in your *Physical Journal*, namely, that the nitrous phosoxyd, or gaseous oxyd of azote is respirable when perfectly freed from nitrous gas." During the next twelve months, Beddoes and Davy made an exhaustive study of nitrous oxide. In the laboratory, Davy studied methods of producing the gas and subjected it to many chemical tests. It was administered to dogs, cats, rabbits, guinea-pigs, mice, hens and goldfinches. Many of the animals died and their bodies were dissected and copious notes taken on the condition of their various organs. Nitrous oxide was administered to water lizards, to flounders, to thornbacks, to butterflies, drones, snails and earthworms. Beddoes and Davy inhaled nitrous oxide themselves, administered it to their friends, including Josiah and Thomas Wedgwood, Joseph Priestley, Robert Southey and Samuel T. Coleridge, and tried its effects in many diseases.

The results were published, June 25, 1800, in a 343 page, octavo volume with the title: "Researches, Chemical and Philosophical, chiefly concerning Nitrous Oxide, or Dephlogistigated Nitrous Air, and its Respiration, by H. Davy." When we open this volume we find that it differs greatly from previous scientific works. Books on chemistry had shown the influence of alchemy, phlogiston and caloric. As one reads the volume of "Researches" it seems to have been written yesterday, so completely had Beddoes and Davy freed their minds of ancient error. When the book was completed, nothing remained to be said about nitrous oxide. It contains two vital paragraphs:

> As nitrous oxide in its extensive operation appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place. [And again] Modification of the powers of nitrous oxide by mixture of this gas with oxygen or common air, will probably enable the most delicately sensible to respire it without danger, and even with pleasurable effects.

Thomas Beddoes inhaled ether vapor until he became unconscious. It remained for Michael Faraday to complete this study and find that "when the vapor of ether mixed with common air is inhaled, it produces effects very similar to those occasioned by nitrous oxide." Fifty years later, the medical profession, suddenly awakening, perceived the importance of these discoveries.

The fame of the Pneumatic Institution spread through the scientific world and brought many distinguished visitors to its doors. Its course was suddenly interrupted by a severe epidemic of typhus which devastated the Bristol region in the Autumn of 1800. Beddoes turned his energy and the equipment of his institution to combat the disease. The original aim of the Pneumatic Institution was gradually abandoned and it became an ordinary sick hospital. Nitrous oxide continued to be inhaled for some time after the other gases had entirely given way to the usual remedies. Beddoes became enthusiastic over the idea of preventive medicine. He circulated pamphlets some of which may still be found. "Rules for the Sick and Drooping Poor." "Instructions relating to Acid Fumigation and the Application of Cold Air and Cold Water Internally and Externally." "To Warn the Humble and Less Instructed Classes against the Malicious Effect Resulting from Lack of Cleanliness, and from a variety of Prejudices almost universally Prevalent in their Treatment of the Sick."

After the epidemic had run its course, Beddoes continued his work in preventive medicine by founding a Public Health Institution. To defray expenses, each member paid half a crown per year, which entitled his family to the benefits of the institution. To bring the cause of preventive medicine before the public, Beddoes began, in 1801, the publication of *Hygeia*, a magazine containing "Essays, Moral and Medical, on the Causes affecting the Personal State of the Middling and Affluent Class." His last pamphlet, published in 1808, was: "Good Advice for the Husbandman in Harvest and for all those who labor in Hot Births."

In the same year, Thomas Beddoes, worn out by a lifetime of strenuous undertaking, died, at the age of forty-eight. He was a man of great powers and wide achievements, which he directed to noble and philanthropic ends. He strove to effect social good by popularizing medical knowledge. He neglected his own welfare to devote his life to humanity. He died, sad and despondent, on Christmas Eve, "as one who has scattered abroad the *avena fatua* of knowledge, from which neither branch nor blossom nor fruit has resulted."

In March, 1801, Humphry Davy, at the invitation of Count Rumford, accepted an appointment as Professor of Chemistry and Director of Laboratories at the Royal Institution of

London. As assistant he chose a man even younger than himself, Michael Faraday. It is difficult to express or even to form an appreciation of the work of these men at the Royal Institution. Benzine, aniline, potassium, sodium, boron, chlorine, the miner's lamp, the electric arc light, electro-magnetic induction, lines of magnetic force, electrolysis, the magnetization of light, electro-magnetic rotation, the induction coil. How can we appreciate our loss if these words were absent from our vocabulary and the ideas which they represent, from our daily lives. Yet all of these discoveries, with the exception of the miner's lamp and the arc light as used in a few lighthouses, seemed at the time to be of little practical importance. Michael Faraday refused a fortune that he might continue his life work at the Royal Institution at 100 pounds a year. Humphry Davy, knighted, decorated by foreign governments and honored by scientific societies, kept as his choicest possessions a service of plate with a memorial signed by thousands of working miners, thanking him for having freed them from "the terrible and invisible agent of destruction, Fire Damp."

Thomas Beddoes, in his public health work, was almost a century ahead of his time. His Pneumatic Institutution was even more remarkable. For surgical anesthesia, the Pneumatic Institution provided the agent, nitrous oxide, subjected this agent to exhaustive chemical and physiological tests, showed that it could be safely inhaled and suggested its use to relieve the pain of surgical operations. Next, the advantage of combining oxygen with nitrous oxide was clearly stated. Then, ether vapor mixed with air was found "to produce effects very similar to those occasioned by nitrous oxide." For surgical anesthesia, nothing remained to be done but to make use of the knowledge acquired.

The fundamental idea of the Pneumatic Institution, the treatment of disease by inhalation of factitious airs or gases, is being carried out in the present development of inhalation therapy. After long laboring under the handicaps of impure and expensive agents, lack of efficient apparatus and indifference of the medical profession, all of which have been largely removed as a result of the production of efficient devices for the control of gases for use in anesthesia and the extensive commercial use of gases in the arts, inhalation therapy has become essential because of the conditions of modern life. The efficient treatment for carbon monoxide poisoning, called the greatest hazard of modern life, is inhalation of a mixture of carbon dioxide and oxygen. Carbon dioxide stimulates the failing respiration and oxygen reverses the combination which the carbon monoxide has made with the blood. So striking is the value of this inhalation that everywhere we find mines, hospitals, fire departments, police stations and the plants of gas and electric companies provided with equipment for carbon dioxide oxygen inhalation. These inhalators are also efficient in resuscitation from drowning, in morphine poisoning, alcoholism, methyl alcohol poisoning and in electric shock. In the treatment of atalectasis or massive collapse of the lung, carbon dioxide inhalation is of striking value. In some instances, a single treatment with 10 per cent carbon dioxide in oxygen has caused almost complete restoration of the collapsed lung.

In hiccup, carbon dioxide inhalations always give relief and frequently result in complete cure. In catatonic dementia precox, inhalations of 30 to 100 per cent carbon dioxide produces transient improvement, restoring speech for varying periods of time. In poisoning by chlorine gas, nitrous oxide has long been used to relieve the dyspnea and suffering.

In anesthesia, carbon dioxide inhalation is providing an invaluable adjunct. The inhalation of carbon dioxide with oxygen can raise the blood pressure from 10 to 85 mm. This effect can be produced to some extent in surgical shock and is often of value during anesthesia of patients in exhausted condition. It is now a routine practice to administer carbon dioxide with oxygen for several minutes at the close of anesthesia. The respiratory stimulation produces a thorough ventilation of the lungs and frees any alveoli which tend to collapse. This procedure has been sufficiently tried to prove that it is a remarkable preventative of postoperative atalectasis and pneumonia.

In pneumonia, inhalation of 40 to 100 per cent oxygen combats anoxemia, relieving dyspnea, restlessness and delirium and clearing up venous congestion and cyanosis. Respiratory and even circulatory embarrassment is relieved. Oxygen inhalation is often efficient in cardiac decompensation, in hay fever and in asthma. In other instances, oxygen inhalation seems to result in benefit by stimulating metabolism. In some cases of ulcers and extensive burns, the results have been favorable. In Russia, oxygen inhalation has been used with benefit in the treatment of diabetes.

So, from the *avena fatua* scattered abroad in sorrow by Thomas Beddoes, we, in the twentieth century, in the widespread and varied fields of public health, inhalation therapy and anesthesia, reap a fruitful harvest.

References

Stock, J. E. Memoirs of the Life of Thomas Beddoes. m.d. Printed for John Murray, 32, Fleet Street, London; J. M. Gutch, Bristol; William Blackwood, Edinburgh; and M. N. Mahon, Dublin; by E. Bryan, Bristol, City Printing Office, 1811, Quarto.

Beddoes, T. Contributions to Physical and Medical Knowledge, Principally from the West of England. Printed by Biggs and Cottle, for T. N. Longmans and D. Rees. London, 1799.

Davy, Sir H. Bart. l.l.d. f.r.s. Foreign Associate of the Institute of France, etc. Collected Works. Ed. by his brother, John Davy, m.d. f.r.s. Smith, Elder and Co., London, 1839.

[From Nüremberg Chronicle, 1493.]

HISTORY OF CINCHONA AND ITS THERAPEUTICS*

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INTRODUCTORY

THE discovery of cinchona with the subsequent isolation of quinine has played a great part in the preservation of human health and life, and for this no nation has more cause for gratitude, and for anxiety that a constant supply of this essential means of protection should be assured, than the British Empire with its far-spread extensions in India, Africa, and other tropical regions. Malaria, however, is far from being a vanquished disease; recently it was estimated that disability and loss of life due to malaria still cost the British Empire fifty-two million sterling annually (Andrew Balfour), and in 1920, James estimated that in India there are 1,300,000 deaths annually from endemic malaria. The discovery of cinchona is one of the decisive victories of medicine, and probably influenced Sydenham in coming to the conclusion that each disease should have its specific remedy; Sydenham writing to Dr. Robert Brady in 1680 stated that the bark cured ague by "a secret virtue," destroying the "seeds of the disease" and not by any "sensible evacuation." No other drug, said Neuberger, did so much to upset the current doctrines of medicine, and, in Ramazzini's graphic simile, it did for medicine what gunpowder had done for war; its rapid cure of a chronic intermittent fever, for which the older remedies had been given for months with the object of voiding the "corrupted humours," was the end of Galenism in medical practice (Garrison). This year (1930), which also marks the fiftieth anniversary of A. Laveran's discovery of the malarial parasite (November 6, 1880), at Constantine in Algeria, has been specially chosen for the Tercentenary Celebration of Cinchona, because 1630 was certainly one of the earliest occasions, if not the first, on which it was given to a European for malaria.

This Exhibition contains a wonderful collection of cinchona bark and illustrates every aspect of the subject. For the opportunity of seeing so much under such pleasant and easy conditions we are deeply indebted to Dr. H. S. Wellcome, who more than fifty years ago visited the cinchona forests in South America and left a record which all interested in the history of cinchona will do well to consult.

HISTORY OF THE INTRODUCTION OF CINCHONA BARK

There will probably always be doubt and room for discussion whether or not the aboriginal Peruvians recognized the medicinal value of cinchona before Pizarro's discovery and invasion (1513–1533) of the country. John Gray, in 1737, quoting William Arrot, a Scottish surgeon who travelled in Peru, stated that the natives were acquainted with the use of the bark; whereas, F. H. A. von Humboldt when at Loxa, in 1807 said that the natives were afraid of using it for malaria. In the absence of any positive evidence that the ancient Peruvians had this knowledge, it might be considered that, as the burden of proof rests with those who believe in the antiquity of the use of cinchona bark, the presumption is to the opposite effect. On the other hand, it has been urged that the Indians were and are extremely secretive about their medicinal remedies, and very probably the knowledge was local rather than universal amongst them (H. S. Wellcome), and first confined to the district around Loxa (Flückiger); the late E. M. Holmes concluded that the bark was not in general use among the Indians. It has been suggested, as in Madame Genlis' novel "Zuma," that the natives, from hatred of their Spanish invaders, withheld any information about such a valuable asset to health (Geoffrey). The policy of the Spanish conquerors to destroy all evidence of native civilization in Peru and to appropriate the credit would undoubtedly explain the absence of any authentic information on this point. Romantic traditions have naturally arisen about its discovery, such as that recorded by de la Condamine (1701–1774) that the Indians learned the truth by watching lions with ague eating cinchona bark. Another and more plausible legend, though not of Peruvian origin, is to the effect that a Spanish soldier with ague, left to die by his companions when marching through a forest, quenched his thirst with water from a pool in which a cinchona tree was growing, and that he recovered to join his companions and give an account of his resuscitation. This would appear to be another version of the legend, also mentioned in 1738 by de la Condamine, among the natives of Loxa that the properties of the bark were first recognized after an earthquake near that city which caused some cinchona trees to fall into a lake, the water of which was drunk by an Indian with fever, who then rapidly recovered. According to Joseph de Jussieu (1704–1779), naturalist, engineer, physician and traveller, it was in 1600 that a Jesuit was cured of ague by bark given him by an Indian cacique with whom he lived at Malacatas near Loxa.[1]

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* An Address at the Cinchona Tercentenary Celebration at the Wellcome Historical Medical Museum London, England on December 10, 1930.

In 1630, Don Francisco Lopez de Cañizares, the Corregidor of Loxa, was cured of ague by bark given to him by an Indian cacique of Malacatas. According to the usual history Ana de Osorio[2] (1599–1689), wife of Don Luis Geronimo Fernandez de Cabrera y Bobadilla, fourth Count of Chinchon, who had been Viceroy of Peru for ten years, was in 1638 cured of ague by cinchona bark sent to her at Lima by the Corregidor of Loxa, and administered by her physician Don Juan de Vega. The Countess took steps to enable the aguish poor, both in Peru, and after her return to Spain in 1640, on her husband's estate at Chinchon, to share the advantages of the new remedy.

It may appear somewhat ungracious and is certainly iconoclastic to throw doubt on the charity of Ana de Osorio and to deprive her of the fame as *the* Countess of Chinchon who was cured by the bark called after her and shared her remedy with the poor. But from the investigations of The Wellcome Historical Museum, it appears that she died before 1628 and that the Count had married again, so that it was his second wife Francisca Henrique de Ribera who was cured of ague by the bark in 1638, and that she is, therefore, *the* Countess of the bark. Further, she died in 1641 at Carthagena in Colombia, then a province of Peru, and never returned to Spain. Her husband came back to Europe in that year, as did his physician, Juan de Vega, who carried with him supplies of the bark and sold it in Seville at a hundred reales a pound. The Jesuits also sent the bark to Spain, and it thus became known as the Countess' powder (*Pulvis comitissae*), or, more widely, as the Jesuit's bark or powder. A specimen of this powder, from the old pharmacy in Granada, is on view in the Exhibition. An earlier date, however, has been given for the importation of bark to Spain; thus Sebastian Barba, professor of medicine at Valladolid, in what appears to be the first publication on cinchona bark: "Vera Praxis ad Curationem tertianae" (1642), quoted J. Villerobel, a Spanish physician, to the effect that it reached Spain in 1632, though it was not used until 1639 in Madrid; according to Rompel cinchona was first transported from South America to Spain in 1632 by the Jesuit Barnabe de Cobo (1582–1657), Procurator of the Peruvian Province of the Order. From Spain its fame naturally travelled to Italy, the Jesuits bringing it in 1650 to the notice of the Spanish Jesuit Juan de Lugo (1583–1660), who had become a cardinal in 1643; he had it examined by Gabrielle Fonseca, physician-in-ordinary to Pope Innocent x, and, receiving a very favorable report, became an enthusiastic advocate of its use in Europe, and arranged for the importation of supplies through Spain from South America. As a result of his influence, Pietro Paolo Pucciarini (1600–1661), apothecary to the Jesuit College at Rome, formulated in 1651 directions (*Schedula Romana*) for the use and distribution of the bark in an unadulterated form. It then became known as the *Pulvis eminentissimi Cardinalis de Lugo* and *Pulvis Patrum*, and was carried by the Jesuit priests to the Netherlands. Then arose a very vigorous wordy warfare, two at least of the combatants hiding their identity under *noms de plume*. This dispute, while due in no small degree to anti-Jesuit feeling, was probably also justified by adulteration of the bark with inert additions, which began at Loxa about 1650. In 1652, the Archduke Leopold William of Austria, the Viceroy of the Netherlands and Burgundy, who had been energetic in popularizing the use of the bark, contracted quartan malaria, and, after taking the remedy according to the directions of the Roman schedule, temporarily recovered; but, when a relapse occurred thirty days later, he refused to take the bark, and directed his physician, Jean Jacques Chifflet (1588–1660), to publish his case. In his "Pulvis febrifugus Orbis Americani ventilatus," published at Brussels in 1653, Chifflet, who was also activated by anti-Jesuit bias, minimized the value of cinchona and stated that in Brussels it had not cured a single case of ague. This raised the ire of Cardinal de Lugo who inspired the counterblast "Peruvianus febrifugus vindicatus,"[3] by a Jesuit, Honorius Faber, writing under the pseudonym of Conygius Amtimus. This was the first Italian work advocating the bark. It was promptly answered by Vopsicus Fortunatus Plempius (1601–1671) of Louvain, in his "Peruviani Corticis Defensor (A. Conygius) repulsus a Melippo Protimo Belga."[4] Plempius, it may be mentioned, is also known for having first opposed and later supported Harvey's discovery of the circulation of the blood. Sebastiano Baldi (or Badi) then replied for the Italian side in "Cortex Peruviae redivivus, Profligator Febrium, assertus ab impugnationibus Melippi

Protimi."[5] Roland Sturm, of Louvain, in 1659 advocated the use of the remedy in his "Vendiciae Pulveris febrifugi Peruviani."[6] The classical treatise (1709) of Francesco Torti (1658–1741) on Malaria and Cinchona went through eight editions and introduced the name *mal aria.*

In 1655, the use of cinchona bark became known in England, and in 1658, a year remarkable for the prevalence of intermittent fever, an early newspaper, *Mercurius politicus,* contained advertisements on July 1 and 29, October 28, and December 16, the last of which ran as follows:

> The Feaver Bark, commonly called the Jesuites Powder, which is so famous for the cure of all manner of Agues, brought over by *James Thompson,* Merchant of Antwerp, is to be had either at his own Lodging at the Black Spred-Eagle in the Old Bailey over against Black and White Court, or at *Mr. John Crooks,* Bookseller at the Ship in *St. Paul's* Churchyard, with directions for its use. Which Bark or Powder is attested to be perfectly true by Doctor Prudjean and other eminent Doctors and Physitians who have made experience of it.

The first three appearances of this advertisement were the same, except that they did not contain the last sentence with the reference to "Doctor Prudjean," who may have been Sir Francis Prujean (1593–1666), President (1650–1653), of the Royal College of Physicians of London, or his only son Thomas, a Fellow of the College, who predeceased his father in 1662. The powder was used by Sydenham, Richard Morton and Robert Brady of Cambridge, the first two of whom separated agues from other fevers by their response to bark. The British Museum Sloane Manuscript 2812 of John Metford's "Observationes et Curationes," dated 1656, contains the record of a pregnant woman at Brampton, near Huntingdon, who was cured by small doses of the Jesuit's powder. Sydenham wrote on the bark in his "Methodus Curandi Febres," 1666. In a letter to Sydenham on December 31, 1679, Brady stated that he had used bark for nearly twenty years, and Thomas Willis of Oxford in his medico-philosophical discourse on "Feavers," published in 1659, devoted much space to the mode of action of bark. Its popularity, however, was no doubt largely due to the activities of Sir Robert Tabor, Talbor or Talbot (? 1642–1681), a Court Physician who, like a charlatan, kept his preparation and method of administering it secret.

Tabor had a short, but financially successful life; born in Cambridgeshire, he was the son of John Tabor, Registrar of the Bishop of Ely, and grandson of James Tabor, Registrar of the University (1600–1645) and M.A. of Corpus Christi College, Cambridge. Apprenticed to an apothecary in Cambridge, called Dean, he paid special attention to the method of giving the powdered bark to aguish patients, and subsequently acknowledged his indebtedness for information on the subject to a member of the University called Nott, probably the Rev. John Nott (1624–1702), elected a Fellow of Trinity College in 1647. Tabor was admitted a sizar for five years at St. John's College on May 19, 1663, but there is not any evidence that he ever took a degree. In order more thoroughly to study the effects of the bark, Tabor moved into a marshy and more malarious district near the coast of Essex. He then came to London, set up his sign in Holborn, next door to Gray's Inn, and in 1672 brought out Πυρετολογιά "A rational account of the cause and cure of agues, with their signes, diagnostick and prognostick."[7] An interesting account of this very rare book was given by G. Dock. There are two copies of it in the Library of the Royal College of Physicians of London; but there is not a copy in the University Library at Cambridge, England. In it Tabor adopted the shrewd device of insisting on the danger of the Jesuit's powder when administered by unskilled hands, and camouflaged his use of the bark by mixing it with other ingredients. The merits of his treatment were the smaller and more frequent doses of the powdered bark. Notwithstanding opposition from other practitioners, Tabor's powders became so famous that, after curing Lady Mordaunt's daughter, he was in 1678 appointed Physician-in-Ordinary to Charles II, with a salary of £100 a year, and was knighted at Whitehall. As he was not a licentiate or fellow of the Royal College of Physicians of London, and therefore was liable to prosecution if he practiced in London, the King directed the College not to interfere with him. In the following year he successfully treated the King at Windsor for an attack of tertian malaria; this was in the face of the opposition of Richard Lower (1631–1691), the well-known physiologist and physician, who, until 1678 when he got into political trouble, was "the most notable physician in Westminster and London and no man's name was more cried up at Court than his." The King, however, asked the advice of Dr. Thomas Short (1635–1685) who had obtained much of Lower's Court practice, was a Roman Catholic and a friend of Sydenham. Probably knowing that Tabor's remedy contained cinchona bark he advised the King to take it. In this year Tabor was sent by Charles II to Paris to cure the Dauphin of ague, and then, with worldly wisdom, assumed the name of Talbot which was historically familiar there. The French physicians, however, did not regard Tabor as a *persona grata*, and pointedly asked him "What is fever?" To which he is said to have replied "I do not know; you gentlemen may explain the nature of fever; but I can cure it which you cannot." The Dauphin recovered after taking his remedy, and Louis XIV treated him with great consideration and begged him to remain in France; the offer being declined, he gave him the title of Chevalier, a pension of £100 a year, and in 1679 bought the secret of his remedy, known there as "the Englishman's cure," for two thousand pounds. Further, Tabor was granted for ten years a monopoly of the remedy which was forbidden to other French doctors under heavy penalties; the composition was not to be published until after Tabor's death. He also treated the Prince de Condé and Colbert the Finance Minister. The letters of Madame de Sevigné (1626–1696) praise Tabor at the expense of the French physicians, and show that he attended the Duc de la Rochefoucauld, author of the "Maxims," who, however, died on March 7, 1680. Tabor thus waxed extremely rich. The composition of his remedy proved to be an infusion of a considerable quantity of cinchona bark in "good claret wine." In 1679, Tabor attended Louisa Maria d'Orléans, Queen of Spain and niece of Louis XIV, and was described as her *premier médecin*. Tabor died on October 1, 1681, and was buried in the North Chapel of Holy Trinity Church, Cambridge, a monument on the wall of the north aisle describing him as *Febrium Malleus.* After Tabor's death Louis XIV ordered the publication by Nicolas de Blegny, his surgeon, of a pamphlet then in the hands of D'Aquin, the King's chief physician, which was immediately translated into English: "The English Remedy: or Talbot's wonderful Secret for curing of Agues and Feavers. Sold by the author, Sir Robert Talbor, to the most Christian King and since his death ordered by his Majesty to be published in French and now translated into English for the Publick Good."[8] It began "Quinquina or Kina-Kina is the bark of an Indian tree, of the bigness of a cherry-tree." Tabor married, on February 17, 1678–9, Elizabeth Aylet of Rivenhall, Essex, and left a son, an officer in the army, known as "Handsome Tabor."

At first there was considerable opposition to the use of cinchona not only by the medical profession, many of whom could not bring themselves to believe in a drug which had not the sanction of Galen, but also because the remedy was introduced by the Jesuits.

Cinchona appears to have been first used in France by Charles Barbeyrac (1629–1699), the famous physician of Montpellier, in 1664, or two years before Thomas Sydenham (1624–1689) wrote on the subject. These two admirers of Hippocrates and leaders in the medicine of their respective countries had met when the English Hippocrates visited Montpellier about 1659.

In 1677 the bark made its appearance in the London Pharmacopoeia under the name *Cortex peruanus.* By 1692 the Jesuit priests in China had supplies of the bark and the Emperor K'ang Hsi, acting against the advice of his regular medical attendants, took the bark and was cured. In 1740, Linnaeus called the cinchona tree *Quinquina cond.*, and in 1742 established the genus *Cinchona Quinquina Condamin. Act. Gal.* 1738; but whether or not his corruption of the spelling of the Countess of Chinchon's name was accidental, orthographic variations in names being then quite common, is uncertain, though Daniel Hanbury brought forward some evidence that Linnaeus deliberately adopted the spelling *Cinchona* for the sake of euphony. At the end of the eighteenth century there was considerable discussion in this country whether the red or the yellow cinchona bark was the more efficacious; in 1781 William Saunders (1743–1817) brought out "Observations on the superior Efficacy of the Red Peruvian Bark in the Cure of Agues and other Fevers,"[9] which in the following year passed into a fourth edition, considerably enlarged. In 1794, John Relph, his junior colleague at Guy's Hospital, dedicated to Saunders "An Inquiry into the Medical Efficacy of a new Species of Peruvian Bark, lately imported into this Country, under the name of Yellow Bark."[10] In this he advocated the superior virtues of the yellow bark, which is stated to have been first introduced into Europe in 1790. This work contained an account by William Babington (1756–1833) of experiments showing that the yellow bark is more powerful than the two species of the best red and quilled bark. In 1783 the Harveian Society of Edinburgh had awarded two prizes to Ralph Irving and T. Sheete for "Experiments and Observations on the Quilled and Red Peruvian Bark." Cinchona trees were first classified botanically by H. A. Weddell in 1849, and this was brought up to date in 1860 by J. E. Howard.

THE GEOGRAPHICAL SOURCES OF CINCHONA

As cinchona trees were indigenous in South America, the Government of Peru for a long time possessed a monopoly in the trade of the bark, and the price of the drug gradually mounted up. In 1743, de la Condamine attempted to transport some cinchona plants to Europe, but they were swept off the ship by a wave in the Amazon before they had left South America. About 1830 the danger of failure of the supply of cinchona bark from South America, where the trees were recklessly destroyed, began to be recognized. The desirability of introducing cinchona trees into India was urged as long ago as 1839 by John Forbes Royle (1799–1858), who suggested the Nilgiri Hills as a suitable region; but this plea was ineffective, although approved later by the Governor-General of India in 1852, and it was not until 1859 that Sir Clements R. Markham (1830–1916) was commissioned to collect young cinchona trees and seeds from the Eastern Andes and to acclimatize them in India and Ceylon. In 1849 cinchona trees were planted in Algeria, but this was not a success. The cultivation of cinchona plants in Java was proposed in 1837 by Fritzi, and in 1852 after receiving the seedlings collected by H. A. Weddell, the Dutch Government started the cultivation of the trees in Java. The first attempt failed, but subsequently, with a fresh supply of seeds from Ledger in 1855, success was achieved; 20,000 trees were raised, which produced 20 per cent of quinine, and as a result the Dutch plantations secured the vast bulk of the market, 95 per cent of quinine coming from this source. Wootton points out that the world is indebted for cheap quinine to Charles Ledger (1818–1906) more than to any other man, and that out of his adventurous services the Dutch have made many millions in Java. Between 1841 and 1858 he travelled in South America, buying alpacas for the New South Wales Government, and collected the best cinchona seeds which eventually, after being offered to the British Government and declined, were in 1855 disposed of, partly at a cheap price to the Dutch in Java and partly in India where their cultivation failed. Markham, who sailed from England on December 17, 1859, after many difficulties succeeded by the middle of the following year in dispatching a good supply of cinchona plants to the Nilgiri Hills in Southern India and superintended the establishment of plantations there. In 1865 the cultivation of cinchona was started in Ceylon; in 1880 the Indian and Ceylon plantations had become not only very important sources for the supply of quinine, for in 1879–1880 the quantity of bark sold in the London market from these plantations was 1,172,000 pounds, but also by far the most reliable of all as regards quality (C. R. Markham). As already stated, however, the Dutch in Java have now obtained command of the trade.

CINCHONA ALKALOIDS

About thirty distinct alkaloids have been obtained from cinchona bark, the most important of which are quinine (1820), quinidine (1853), cinchonidine (1847), and cinchonine (1820). The cinchona alkaloids are general protoplasmic poisons and thus differ from most other important alkaloids which have a selective action on some specialized form of living matter. The various cinchona alkaloids differ from each other mainly in degree; thus as an antiseptic quinine is the most powerful, and then, in order, quinidine, cinchonidine and cinchonine; quinidine is less effective than quinine in malaria, whereas it is the most effective of the cinchona derivatives in restoring the normal rhythm of the heart in auricular fibrillation and flutter.

QUININE

Attempts to isolate the active principles of cinchona bark were made on many occasions before this was accomplished. Thus, Count Claude de la Garaye in 1746, isolated what he called the essential salt of quinquina; Buquet and Cornette, Westerling (1762), A. F. Fourcroi (1792), Reuse of Moscow, Seguin (1802), Andrew Duncan the Younger (1773–1832) of Edinburgh in 1803, and Vauquelin (1806), also failed to discover quinine. In 1810, B. A. Gomez of Lisbon obtained a substance which he called cinchonino, and in the following year C. H. Pfaff repeated this. In 1820, Peter Joseph Pelletier (1788–1842) and Joseph Bienaimé Caventou (1795–1877), two pharmaceutical workers in Paris, proved that Gomez had obtained a mixture of two alkaloids which they named Quinine and Cinchonin, and for this discovery they were awarded by the Institute the prix Monthyon of ten thousand francs, the only financial reward they received as they did not take out any patent for quinine. John Farr, of Philadelphia, is said to have isolated quinine in 1823, and in 1821, T. N. R. Morson, of London, manufactured quinine sulphate; in 1823 quinine was manufactured in Amsterdam and in Germany in 1828.

THERAPEUTICS OF CINCHONA AND ITS ALKALOIDS

Cinchona and its alkaloids have been used very widely in medicine, and a review of the various diseases for which they have been employed would be quite impossible in the time available. As a bitter tonic bark has long been a favorite, and its employment in sore throats and ulcerations in the past, no doubt depended partly on the astringent action of tannic acid. It has been given in fevers of all kinds, especially in early days; thus Richard Morton used it in smallpox, and John Huxham (1692–1768) in his "Essay on Fevers and their various Kinds," 1755, recommended the compound tincture of cinchona ("Huxham's tincture") which appeared in the London Pharmacopoeia of 1788, in various fevers. It has been much employed as a prophylactic against fevers, especially influenza and colds. Whatever its effect in other fevers, its value in the prevention of malaria is second only to its curative effect on that scourge. Its influence on brow-ague, a condition now little known but once prevalent in malarious districts, is mainly of historical interest. As quinine and its derivatives are general protoplasmic poisons, they have some effect as local anaesthetics, acting on the nerve-ending and not, as does cocaine, on the nerve fibers (Dixon and De). Quinine was at one time given in large doses for Menière's syndrome; but as its toxic action on the ear is now known to cause labyrinthine disorder, it has been largely superseded by bromides. Small doses of quinine increase the activity of smooth muscle and have been thought to be of value in obstetric practice by shortening labor and favoring uterine contraction.

The alkaloids of cinchona, especially quinine, are the only real specific for malaria; hundreds of other remedies have from time to time been advocated for the cure of malaria. Thus, in 1791, A. E. Brande from "Experiments and Observations of the Angustura Bark" was of opinion that it was as good as or better than cinchona in a number of diseases, fevers including ague, dysentery, and putrid sore throat. In 1792, Samuel James, "of the Corporation of Surgeons," and of Hoddesdon, Hertfordshire, published his "Observations on the Bark of a particular Species of Willow, showing its superiority to the Peruvian, and its singular Efficacy in the Cure of Agues, intermittent Fevers, Fluor albus, Abscesses, Haemorrhages, etc." He was followed in the same strain by G. Wilkinson, who in 1803 argued that the "Cortex Salicis latifoliae or Broad-leafed Willow Bark" was of "superior Efficacy above the Cinchona" in various diseases, including not only ague, but abscesses, and "more particularly that branch of the healing art termed Medical Surgery." In 1793 the East India Company brought out privately a pamphlet written by William Roxburgh (1751–1815), Surgeon and Superintendent at the Calcutta Botanic Garden (1793–1813), entitled "A Botanical Description and Drawing of a new Species of Swietenia (Mahogany) with Experiments and Observations on the Powers of its Bark comparing them with those of the Peruvian Bark for which it is proposed a succedaneum." In these papers the wide range of the use of substitutes for cinchona is seen. Some remedies, such as organic arsenical preparations, which were much used in the World War (1914–1918), are certainly adjuvants but cannot be regarded as specific against malaria. It is interesting to note that Thomas Fowler (1736–1801), whose name is so familiar in connection with Liquor arsenicalis (B.P.) wrote to Andrew Duncan the elder (1744–1828) of Edinburgh, that on several occasions between 1786 and 1791 he had been cured of remittent fever by eight drops three times a day of the "mineral solution of arsenic."

Quinidine is the dextro-isomer of quinine. In 1833, Henry and Delondre applied this name to an alkaloid, but its real nature was not determined until 1853 when Pasteur, then studying its effects on polarized light, showed its identity with the beta-quinine which van Heijningen had extracted in 1849 from commercial quinoidine. The name quinidine had also been given to cinchonidine by F. L. Winkler in 1847, and was followed by Leers in this respect in 1852. As confusion was thus threatened by the use of the word quinidine for different basic substances, Hesse proposed that it should be called "conquinine," but this did not meet with general adoption.

After Wenckebach, in 1914, discovered almost accidentally that quinine could restore the normal rhythm of the heart in auricular fibrillation, W. von Frey in 1918 showed that quinidine was the most effective of the cinchona alkaloids in this respect; Lewis, Drury, Wedd, and Iliescu found that quinidine has, weight for weight, five times as powerful an action in restoring the normal heart-beat in auricular fibrillation, and that hydroquinidine, the chief impurity of commercial quinidine, has a very slightly more powerful action than quinidine. The use of quinidine in cardiac disease was taken up with enthusiasm, and then damped by its bad effects, especially embolism, but further experience and discretion in the selection of the cases have established its value and place.

References

1. The presence of cinchona trees in malarious districts led J. T. Maclagan (1838–1903), the medical attendant of Thomas Carlyle, to use salicin in acute rheumatism in 1876, and so to initiate its treatment by salicylates. He argued that acute rheumatism and malaria were closely allied and that, just as cinchona trees grow in malarial districts so would Nature provide the remedy for acute rheumatism in regions that favored its occurrence; he therefore turned to the willow which grows in damp, low-lying parts of the country, the bark of which yields salicin. Salicin had been used for a substitute for quinine as early as 1830 in Paris, and afterwards in London by Elliotson, but had dropped out of the pharmacopoeia long before Maclagan wrote. Maclagan learned afterwards that the Hottentots in South Africa employ a decoction of willow shoots for acute rheumatism.
2. In his "Memoir of the Lady Ana de Osorio, Countess of Chinchon and Vice-Queen of Peru (A.D. 1629–1639) with a Plea for the correct spelling of the Chinchona Genus," London, 1874, Sir Clements R. Markham stated that she was the youngest daughter of the eighth Marquis of Astorga, and was born in 1599 at Astorga. In 1615 she married Don Luis de Velasco who died four years later, and on August 11, 1621, she married Don Luis Geronimo, fourth Count of Chinchon, who was described by Dr. Peralta as "benevolent and just, a compound of Cato and Maecenas"; he, however, did not take any special steps, as it was stated his wife did, to supply his malaria-plagued dependents with the bark.
3. Romae, 1655, 12 mo.
4. Lovano, 1655, 4 to.
5. Genuae, 1656.
6. Antwerp, 12 mo.
7. London, 16 mo., 77 pp.
8. London, 1682, 18 mo., 112 pp.
9. London, 8 vo., 181 pp.
10. London, 8 vo., 177 pp.

Bibliography

Brady, R. In R. G. Latham's Translation of the Works of T. Sydenham, London, Sydenham Soc. 1850, 2: 3.

Dock, G. Annals of Med. History, 4: 241: 1922.

Von Frey. *Berlin. Clin. Wehnschn.*, 55, 450: 1916.

Elliotson, J. *Lancet*, 1: 554, 1831.

Flückiger and Hanbury. Pharmacographia. 1874.

Fowler, T. Letter in Andrew Duncan's Medical Commentaries for 1794.

Von Frey. *Berlin. klin. Wchnschr;* 55: 450, 1918.

Garrison, F. H. An Introduction to the History of Medicine Ed. 4, Phila., Saunders, 1929, p. 290.

Gray, J. An Account of the Peruvian or Jesuit's Bark. *Phil. Trans. Roy. Soc.*, 40: 81, 1787.

Holmes, E. M. *Chemist and Druggist*, 112: 827–832, 1930.

Lewis, Drury, Wedd and Iliescu. *Heart, London*, 9: 207, 1922.

MacLagan, J. T. *Lancet*, 1: 342; 910, 1876.

Markham, C. R. Peruvian Bark, 1880.

Mayor, J. E. B. Admissions to the College of St. John the Evangelist in the University of Cambridge Part I. 1882, p. 159.

Rompel, J. Kritische Studien zur ältesten Geschichte der Chinarinde. *xiv. Jahresber. des öffentlichen Privatgymnasiums an der Stella Matutina zu Feldkirch*, 1905.

Sydenham, T. Works of, Translation by R. G. Latham. London, Sydenham Society, 1850, 2: 5.

Thompson, C. J. S. *Brit. M. J.*, 2: 1188, 1928.

Waring, E. J. Bibliotheca Therapeutica. London, New Sydenham Soc., 1878.

Wellcome, H. S. *Pharmaceut. Journ. & Trans.*, 10: 1031, 1879–80.

Wootton, A. C. *Chronicles of Pharmacy*, 2: 93, 1910.

THE EDWIN SMITH SURGICAL PAPYRUS

AND THE DIAGNOSIS AND TREATMENT OF INJURIES TO THE SKULL AND SPINE 5000 YEARS AGO*

By CHARLES A. ELSBERG, M.D.

NEW YORK

UP to the first quarter of the nineteenth century, the belief that Egypt was one of the oldest, if not the oldest, of civilized lands was, to a considerable extent, based upon surmise. When, however, in 1822, Champollion first deciphered two hieroglyphic inscriptions or "cartouches" of Ptolemy and Cleopatra on the base of an obelisk, and, a few years later translated the inscription on the famous Rosetta stone, the door was opened to the understanding of Egyptian hieroglyphic, hieratic and demotic writing. This made it possible for succeeding Egyptologists to decipher the papyri and the inscriptions found in tombs and on the walls of temples, which has given us the proof of the extreme antiquity of Egyptian civilization.

Professor James H. Breasted, the Director of the Oriental Institute of the University of Chicago has recently completed and published a translation of a papyrus which is of great importance not only to the student of Egypt and its history, but also to the medical profession and to those who are interested in the history of medicine.*

The Edwin Smith Papyrus carries back recorded surgery for almost five thousand years, for this document antedates all known medical papyri, chief among which is the Papyrus Ebers, probably by several centuries and possibly by many more years.

The story of the acquisition of the Papyrus by Mr. Smith is of no little interest. Edwin Smith was an American who was greatly interested in Egypt and had studied Egyptian hieratic writing. In 1858 he settled in Luxor, and there came into intimate contact with many of the leading Egyptologists of the day. In the year 1862, he bought from an Egyptian native a papyrus roll which, so he was informed, had been found in a tomb. The outer part of the roll was in tatters as if some of the layers had been stripped off. Mr. Smith studied the roll and appreciated that it dealt with a medical subject. A few months later, the same native brought him another roll, and Smith recognized that the outer part of this second one consisted of tattered fragments from the first papyrus, which had been pasted around the surface of a dummy. This second papyrus was also bought by Mr. Smith. It was fortunate that he did so, for in the fragments which he removed from this second roll, there was an extraordinary discussion of the heart and its vascular connections. Undoubtedly Mr. Smith devoted much time to the study of the papyrus; he removed the fragments from the counterfeit roll and attempted to arrange them in their proper places on the genuine papyrus.

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* The work is, however, much more than a translation and a learned discussion of the meaning of Egyptian writing. The introduction and the commentaries by Professor Breasted give a comprehensive and highly interesting view of Egyptian history and of the period in which the papyrus was written.

* Read at a stated meeting of the New York Academy of Medicine, Section of Historical and Cultural Medicine, March 5, 1931.

In 1906, upon the owner's death, the document was presented to the New York Historical Society in whose possession it remains.

The Edwin Smith Surgical Papyrus dates from the early Pyramid Age of Egyptian history, the period in which the step pyramid and the pyramids of Gizeh were built. According to Professor Breasted, it may well be possible that the document was written by Imhotep, the statesman-architect-physician at the court of the Pharaoh Zoser, that is, somewhere between 3000 and 2500 B.C.

Regarding its origin, I can do no better than to quote from Breasted's highly interesting and comprehensive introduction:*

> There is good evidence that this surgical treatise was written in the old Kingdom (3000–2500 B.C.) and presumably . . . in the early part of that remote age. The manuscript nowhere hints at the name or station of the author . . . After circulating for some generations, more probably for several centuries, it was found that the book was antiquated in its terms. Not a few words and expressions were evidently no longer wholly intelligible . . . Probably not later than 2500 B.C., some "modern" surgeon, as unknown to us as the original author, equipped the document with a commentary in the form of brief definitions and explanations, . . . appended to each case. Thus he carefully explains all the terms describing the various injuries, or designating the condition of the patient or his symptoms. Similarly, the commentator added many anatomical terms and other designations drawn from nature or the arts . . . In a total of sixty-nine such brief discussions, forming a little dictionary of early Egyptian medical terms, this unknown ancient commentator has given us invaluable revelations of his knowledge of anatomy, physiology, pathology, surgery, and therapeutics; while at the same time he has made clear many terms in the original treatise which would not have been intelligible to us without his little dictionary. This surgical treatise, as it has come down to us, is therefore a composite made up of the original author's text and the ancient commentary . . .
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> The ancient history of our document as a whole illustrates the hazards which beset such records and their meager prospects of survival. It is now without doubt thousands of years since the complete disappearance or destruction of the original copy of this surgical treatise, as penned by the hand of the nameless author himself, probably nearly 5000 years ago. In the same way, the copy to which the ancient commentator appended his explanations, long ago perished. At least one copy of the treatise and commentary together, however, survived the fall of the Old Kingdom (3000–2500 B.C.) and, as transmitted, probably through successive copies, survived . . . the early 18th Century B.C. . . . It was at this time, . . . that a Theban scribe sat down to copy our ancient treatise on surgery. In content the book was then probably over a thousand years old. It was as if a man sat down today to copy a manuscript written in the reign of Charlemagne . . . The scribe was master of a stately and beautiful book hand, but he was totally ignorant of medicine . . . He was excessively inaccurate, but occasionally noticed and corrected his errors—in one case placing an omitted word in the margin, and calling attention to it by a cross, *the earliest known asterisk in the history of book-making* [The italics are my own] . . . When he had copied the old treatise on surgery from the beginning (the human head) down to the thorax and the spine, he stopped in the middle of a case, in the middle of a line, in the middle of a

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* Volume 1 on pages 9, 10, 11, 19, 20.

sentence, and leaving the end of the long roll bare of all writing for some space, he turned it over and copied on the unwritten back a series of incantations against pestilence, to which he added three recipes, one for female troubles and two for improving the complexion . . .

Eventually the unknown owner handed on the roll to some later worthy of the same craft. The last owner was much attracted by a roll containing a recipe for "transforming an old man into a youth," and he, or some scribe for him, took pains to copy this at the end of the older material collected by his predecessors, adding a totally unrelated remedy for some ailment of the anus. [In a tomb, the roll] reposed in perfect safety throughout a vast sweep of human history for some three and a half millenniums, from the migrations of the Hebrew patriarchs and the prehistoric wanderings of the Greek barbarians to the American Civil War.

The Papyrus contains 48 "cases," in 29 of which there are added one to ten explanatory notes by the ancient commentator. With possibly two exceptions, all of the cases contain descriptions of injuries or conditions secondary to injuries which affect the head, throat and neck, clavicles, humerus, sternum and chest, shoulders and vertebral column. The first and last cases are incomplete, and there is no mention of any injury of the abdomen or lower extremities. The subject matter of the entire document is arranged in so orderly a manner, beginning with the head and passing successively to the neck, shoulders, upper limbs and chest, that it is more than probable that the original treatise contained also cases illustrating injuries to the lower parts of the body. The ancient copyist never realized how great would be the loss to future generations of his failure to finish the transcription of the papyrus.

There is much of absorbing interest in each case described in this ancient document; we shall consider here mainly the injuries to the head and the vertebral column, with a brief discussion of the neurological signs and symptoms described and the treatment recommended by this "surgeon" of five thousand years ago. There is full justification for the appellation "surgeon," for the ancient author deals almost exclusively with injuries and their results. From Herodotus we know that there were, in ancient Egypt, "specialists" of all kinds and for different parts of the body.

In the history of the development of medicine, the knowledge of injuries was almost always far in advance of that of internal diseases. The former were recognized to be due to direct external causes, while for untold ages disease was believed to be caused by evil spirits. Therefore, at a period in which internal medicine was still demonic and medical therapy was still empirical and interwoven with magic and incantations, surgical lesions were already accurately observed and described, and a rational therapy advised. Thus, there is a striking difference between the surgery of the Smith Papyrus and the medical therapy found, for example, in the Papyrus Ebers.

In 14* of the 27 cases of trauma to the head, described in the Smith Surgical Papyrus, the injury involved only the soft tissues of the scalp, ear, nose, chin or cheek, or was complicated by a fracture of the nasal bones or maxilla, and caused no "neurological" disturbances. Space will not permit a discussion of these minor injuries, but a few of the recorded facts are deserving of mention:

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* Cases No. 1, 2, 10, 11, 12, 14, 15, 16, 18, 23, 24, 25, 26, 27.

The approximation of the lips of an incised wound by strips of tape, which may have been a kind of adhesive plaster, is clearly described. One of the cases (Case 10) contains the earliest mention of the approximation of wound edges by means of sutures. Stitching must, of course, have been well known to the embalmers of the time, for many mummies have been found in whom the incision made during the embalming process had been closed by continuous suture. It is known from the Talmud, also, that the earliest rabbis were acquainted with sutures for wounds and they probably gained this knowledge from the early Egyptian embalmers and medical men.

In another case (Case 25) there is a description of the method to be used for the reduction of a dislocation of the lower jaw, which is the same as that in use in modern times:

> If thou examinest a man having a dislocation in his mandible, shouldst thou find his mouth open [and] his mouth can not close for him, thou shouldst put thy thumbs upon the ends of the two rami of the mandible in the inside of his mouth, [and] thy two claws [meaning two groups of fingers] under his chin [and] thou shouldst cause them to fall back so that they rest in their places.

In Case 12, advice is given concerning the treatment of fracture of the nasal bones: how the fracture should be reduced, the manner in which the nose should be splinted by means of plugs in the nostrils and rolls of linen bound on the outside. In its essential principles, nothing better than this has been devised by the modern surgeon!

In Case 1, the ancient commentator gives an explanation of what is meant by the "examination" of a patient, which is very illuminating. He pictures the surgeon as placing his hands or fingers at various points along the body of the patient to feel the pulsations of the heart. Professor Breasted raises the question whether the surgeon may have been "counting" the pulse, and he goes on to say:

> If this is so, it is the earliest reference in the history of medicine, for the counting of the pulse was unknown to early Greek medicine and is not mentioned until Democritus and the Hippocratic treatises. If this were so, it would be of great interest also in the histories of instruments of time measurement . . . The earliest known counting of the pulse with a time measurer was done by the distinguished Herophilus of Alexandria in the third century B.C.

FRACTURES OF THE SKULL

The papyrus contains short clinical descriptions of thirteen cases of skull fracture, divided into "splits" or fissured, "smashes" or comminuted, compound comminuted, and comminuted and depressed fractures. From the symptoms mentioned by the ancient surgeon, there are a number of cases of undoubted fracture of the base.

The titles of the cases are the following:

Case 2. "A gaping wound in the head penetrating to the bone and perforating the skull."

Case 4. "A gaping wound in the head, penetrating to the bone and splitting the skull."

Case 5. "A gaping wound in the head with a comminuted fracture of the skull." A compound comminuted fracture.

Case 6. "A gaping wound in the head, with compound comminuted fracture of the skull and rupture of the meningeal membranes."

Case 7. "A gaping wound in the head

penetrating to the bone and perforating the sutures."

Case 8. "A comminuted fracture of the skull displaying no visible external injury." (Described through error as a compound fracture [C. A. E.].)

Case 9. "A wound in the forehead producing a compound comminuted fracture of the skull."

Case 13. "A compound fracture in the side of the nose."

Case 17. "A compound comminuted fracture of the bone in the region of the maxilla and zygoma."

Case 19. "A perforation in the temple."

Case 20. "A wound in the temple perforating the bone."

Case 21. "A split in the temporal bone."

Case 22. "A compound comminuted fracture of the temporal bone."

Each of the cases is discussed under several headings: Title, Examination, Diagnosis, Treatment, and Ancient Commentaries (Glosses).

The "Title" is sometimes specific and at other times rather general, without any indication of the exact location of the injury. The "examination" addressed to a second person, describes the symptoms and sometimes alternate groups of symptoms, and either implies that a certain examination has been made or instructs the reader to make such examination. It is of no little interest that advice and recommendations for surgical treatment are most often included under the "examination" as if only medical measures were considered as therapy. This, as Breasted states, makes one suspect a sharp distinction between the surgeon and the physician. The "diagnosis" sums up and often repeats the facts mentioned under the "examination," and often adds a statement whether the case is one to be or not to be treated, while the "treatment" consists in a few instances of recommendations for actual surgical therapy, but most often gives recipes or advice for external applications of medicaments.

The record of each case is very short, and much is left to the supposed knowledge of the reader, as the following typical case will demonstrate:

CASE FIVE*

Title: Instructions concerning a gaping wound in his head smashing his skull.

Examination: If thou examinest a man having a gaping wound in his head, penetrating to the bone, (and) smashing his skull; thou shouldst palpate his wound. Shouldst thou find that smash which is in his skull deep (and) sunken under thy fingers, while the swelling which is over it protrudes, he discharges blood from both his nostrils (and) both his ears, (and) he suffers with stiffness in his neck, so that he is unable to look at his two shoulders and his breast, (conclusion in diagnosis).

Diagnosis: Thous shouldst say regarding him: "One having a gaping wound in his head, penetrating to the bone (and) smashing his skull, while he suffers with stiffness in his neck. An ailment not to be treated.

Treatment: Thou halt not bind him, (but) moor (him) at his mooring stakes, until the period of his injury passes by.

Gloss: As for: "Smashing his skull," it means a smash of his skull (such that) bones, getting into that smash, sink into the interior of his skull. The "Treatise on What Pertains to Wounds" states: "It means a smash of his skull into numerous fragments, which sink into the interior of his skull."

Gloss: As for "moor [him] at his mooring stakes," it means putting him on his customary diet, without administering to him a prescription.

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* As translated by Professor Breasted in his volume. I have, however, added the second "gloss" from another case (Gloss D, Case 3) so that the meaning of one sentence is made clear.

The Symptoms of Cranial Injuries

These thirteen cases of fracture of the skull give the reader a good idea of what was known of such injuries five thousand years ago. Most of the wounds were probably received in battle, and therefore most of the fractures were compound and not a few were comminuted. The ancient surgeon aptly likens a comminuted fracture to the cracks of a broken pottery jar, and he makes a clear distinction between a simple fracture and one in which the fragments are depressed. From the symptoms he describes, some of the fractures extended into the base of the skull, for bleeding from both or from one ear is mentioned in a number of instances. The hematoma in the soft tissues of the scalp is described as "a swelling which protrudes" over the location of the injury, and in one of the cases is to be found the first recorded mention of the cranial sutures, those irregular lines which the ancient Arabs believed were the patient's destiny written by the hands of Allah.

The first mention in human records of the word "brain," as well as of the meningeal membranes and of "the fluid underneath them" is to be found in Case 6. The surface appearance of the brain is likened to the film and corrugations to be seen on the surface of molten copper as it is cooling. It is difficult to understand why some word for brain had never before been met with, for parts of that tissue must have been commonly seen by the embalmers who, according to Sprengel, Bass, Garrison, and others, evacuated the contents of the cranial cavity by means of a hook passed into the interior of the skull through the cribriform plate of the ethmoid.

The occurrence of crepitus in fractures is mentioned for the first time in this papyrus, although in at least one instance (Case 13) the crepitation felt by the fingers may have been due to a gas bacillus infection of a wound.[*]

Several of the patients must have been seen a number of days after their injury for there was clear evidence of meningitis which, as we know, occurs as a complication some days after a cranial injury. The patient is "unable to look at his shoulders and his breast," i.e., he is unable to approximate his chin to his sternum. This stiffness or rigidity of the neck was not always, however, a sign of meningitis, because it is mentioned also, in a case of tetanus complicating a sloughing and necrotic wound (Case 7) and, as we shall see later on, in a case of injury to the muscles of the neck and the cervical vertebrae.

Disturbances of speech are described, amounting in at least one instance (Case 20, a wound in the temporal bone) to aphasia. It is fair to assume that in this case the fracture of the temporal bone was on the left side, and the "aphasia" was due to injury of the temporal or frontal lobes of the brain. If this is correct, then this is the first description known in medical history of a cranial injury complicated by a lesion of the brain and aphasia.

In another instance (Case 8) for the first time in the history of science, the ancient surgeon has noted the effects of the cranial injury upon the upper and lower limbs. As the loss of power in the limbs and the facial paralysis ("his eye on that side is askew") were on the same side as the cranial injury, one has the right to conclude that the cranial disturbances were due to an injury of the brain on the other side, due to a bursting fracture on the side opposite to that in which another fracture existed: in other words what for many years was called a fracture by "contrecoup." The patient was evidently seen by the surgeon a considerable time after the injury had been sustained for he (the patient) already had hemiplegic contractures, "with nails in the middle of his palm," "shuffling with his sole," "walking with his sole dragging." This is the first written record of hemiplegic contractures.

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[*] Crepitation is mentioned also in a case of fracture of the ribs with probable puncture of the lung; in this case, the crepitation was probably caused by a subcutaneous emphysema.

THE TREATMENT

In some of the cases, therapy is recommended; in others, the advice is given to wait treatment until it is possible to conclude whether the patient will recover, "putting him on his customary diet without administering to him a prescription"; in still others, the injury is considered so severe that it is regarded as fatal: the surgeon considers the condition a hopeless one and declares it "a condition not to be treated." In a few of the patients in whom a hopeless verdict is given, there is no mention of any treatment, but in others applications are suggested, evidently as an alleviation and without much hope of doing the patient any good.

As already mentioned, the part of the treatment which may be considered "surgical" is, with a few exceptions, recorded under the heading of the examination. There is nowhere any suggestion of operative treatment, excepting where the surgeon instructs his reader to suture the wound, and in two instances where blood clots are to be removed from the nasal cavities, and fragments of bone from the external auditory canal. In some of the patients the edges of the wound are to be drawn together with adhesive strips; in others, the reader is specifically instructed not to draw together the wound edges, the ancient surgeon intimating that drainage was necessary. The wound shall be first dressed with meat, and later with honey or grease on lint.

From one case, in which the advice is given to obtain the bandages from the embalmers, it is clear that the latter, who both made bandages and were very expert in applying them to the dead body, were expected to supply bandages for the use of the surgeon.

In only one case in the entire papyrus, and that a skull fracture, the "treatment" consists of a curious mixture of superstitions: a poultice for drying up the wound is to be made from the eye of an ostrich, and a charm is to be said over the wound, followed by the application of a compress composed of figs, grease, and honey "cooked, cooled, and applied to it." The treatment of this case is very unlike that described in any other part of the surgical papyrus, and reminds one of what is regularly found in "medical" papyri of a later age.

The ancient surgeon recommends that, in fractures of the skull, the patient is to be kept in the upright position: "His treatment is sitting. Make for him two supports of brick until thou knowest he has reached a decisive point." This suggests to the modern reader, the idea that the ancient practitioner had observed that patients with skull fractures got along better if the head was raised. The sitting position would certainly keep intracranial pressure lower and would be of aid in the prevention of intracranial hemorrhage.

Dislocations and Fractures of the Vertebrae

The papyrus contains 6 cases* of injuries to the spine, of which one, the last in the document, is incomplete. If the ancient scribe had copied the entire work of the surgeon, there would, no doubt, have been a number of instances of injuries to the thoracic and lumbar vertebrae, "the vertebrae of the backbone."

The titles of the cases follow:

Case 29. "A gaping wound in a vertebra of the neck."

Case 30. "A sprain in a vertebra of the neck."

Case 31. "A dislocation in a vertebra of the neck."

Case 32. "A displacement in a vertebra of the neck."

Case 33. "A crushed vertebra in the neck."

Case 48. "A sprain of a vertebra in the spinal column."

As there was a wound of the soft tissues in only one instance, it is fair to conclude that most of the injuries were sustained in civil life. In Case 33, the mechanism of the impacted fracture is indicated by the explanation given: "His falling head downward has caused that one vertebra crush into the next, it means that he has fallen head downward upon his head, driving one vertebra of his neck into the next."

A sharp distinction is made between the cervical, "the vertebrae of the neck," and the lower parts of the bony spine, "the vertebrae of the backbone."

In only two instances, both of no little interest, the ancient surgeon goes into considerable detail regarding the symptoms of what was evidently an injury to the spinal cord, although he says nothing that would permit one to conclude that he knew that there was such a structure.

The surgeon states that injury to the cervical vertebrae caused a paralysis of both upper and lower limbs, a loss of sensation and of control of the bladder so that "his urine dribbles without his knowing it." He attempts to differentiate between the symptoms of an injury of the lower and of the upper cervical vertebrae: in both instances the patient has lost power and sensation in the upper and lower limbs, but in the injury of the higher vertebrae, "the middle vertebrae of the neck," there is urinary incontinence, priapism, and involuntary ejaculation of seminal fluid.

These anatomical and pathological details, antedate by thousands of years, anything concerning loss of function of the spinal cord previously recorded. The earliest known references to spinal cord localization of function had, before this, been found in the Hippocratic treatises (about 400 B.C.), in the writings of Celsus, and in those of Aretaeus, who lived in the second or third century of the Christian era.

There are a few other symptoms to which the ancient medical man makes reference. In several of the cases the patient is described as unable to flex his chin on his chest, no doubt due to the nature and especially to the local effects of the injury upon the bones and the muscles and other soft tissues of the neck. Abdominal dis-

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* Cases 29, 30, 31, 32, 33, 48.

tension is mentioned as a symptom of dislocation of a cervical vertebra. We now know that, although abdominal distension may occur in injuries of the spinal cord at various levels, it is especially frequent when the middle and lower thoracic segments are involved.

In one interesting case, that of a crushed or impacted fracture of the bodies of the cervical vertebrae, the patient was "voiceless," that is he probably was hoarse and able to speak only in whispers from a trauma to the recurrent laryngeal nerve.

The meagerness of detail regarding the "neurological" symptoms of injuries of the vertebrae, is probably due in part to the fact that in only a few cases was there a lesion of the spinal cord, and in part to the fact that the copying of the manuscript by the ancient scribe was unfinished and therefore the injuries of the greater parts of the spine not described. This is the explanation, also, why so little is said of treatment which consists in the main of external application of meat, and of honey and other substances. It is of interest that in the case of "displacement of a cervical vertebra" the recommendation is made that the patient should be kept in a sitting position, while in the case of "a sprain of the spinal column," by which was probably meant an injury of the thoracic spine, the patient is to be placed in a horizontal position.

Withington, in his artistic and philosophical "Medical History," makes the statement that the ancient Egyptians were "essentially a matter of fact race; types of those practical people of whom it has been well said that they practice the errors of their fathers." To the Greek, he says science was "a majestic goddess, a clear-eyed Pallas Athené: to the Egyptian she was a domestic cow, good only for what could be got out of her." Breasted acknowledges that before his translation of the Edwin Smith Papyrus, most Egyptologists, himself included, had believed that Egyptian medicine and surgery were purely utilitarian and materialistic. The ancient author of our Papyrus certainly was an exception, even if his writing does not directly contradict the beliefs once held by Withington and most other students of the subject. The author and the ancient commentator, both describe and explain facts concerning hopeless injuries, apparently for their scientific interest alone. The conclusion arrived at by Professor Breasted is therefore fully justified: that even at this early period, almost five thousand years ago, knowledge was cultivated for its own sake. We have therefore the picture of this ancient surgeon as the earliest known example of the scientific doctor.

The investigations in paleopathology that have been made in the past decades have given us much evidence of the antiquity of human disease, and it is reasonable to believe that dawning civilization gradually brought with it the recognition of human ailments, the desire to treat injuries and diseases, and the urge to transmit to others the knowledge gained.

This papyrus demonstrates conclusively that at the most remote period of which we have a written record, medical science was recorded for its own sake. The Edwin Smith Surgical Papyrus is the oldest milestone yet discovered on the long road to modern medicine; it is a document of great human interest as well as an important contribution to the history of medicine and surgery.

CH. ALPHONSE LAVERAN, 1845–1922

HIS LIFE AND WORKS, READ ON THE FIFTIETH ANNIVERSARY OF THE MALARIA PARASITE

By JOSEPH FRANCHINI

MODENA, ITALY

WHEN late in the winter of 1880, Alphonse Laveran communicated to the Academy of Medicine of Paris his first observations on the discovery of the malarial parasite, L. Colin, animated by great benevolence limited all his objections to but one doubt: "Is it not possible that Laveran has mistaken this supposed parasite for melanotic leucocytes rich in pigment? For if these parasites are truly of animal origin, as is asserted, how can the absence of direct contagion from man to man be explained?"

As a matter of fact the communication came at a time when weird discussions and arguments on the most widely spread scourge in the world were buoyed up by confusion to a highly imaginary and philosophical state.

In Sardinia there still exists a mountain stream which in its course often spreads out to stagnant and pestiferous marshes. The now extinct inhabitants called it "Perfugas" (flee). All about it is bleakness and squalor, lacustral plants, briar-root, tangled clumps of brushwood and thorn; stunted emaciated shepherds hover about; masses of rocks heaped up everywhere, and precipices where the sun struggles to bring life again.

A veritable Dantean scene worthy of its name "Perfugas." Human minds overcome by fear turned to flight. In that way, man, or rather this dread disease, sealed the unhappy fate of Sibari, Agrigentum, Eraclea, Paestum, and many other Etruscan cities which thus saw their ancient civilization overthrown. In the same way the ambitious and daring programs of the first explorers of dark Africa could not be carried out; the attempts of Lesseps in the Panama Canal Zone were disorganized and armies of pioneers were mowed down.

Whence even in our so-called civilized time, youths fighting near Valona, on the lower Piave, at the Dardanelles and Salonike battlefront, were put to a severe test, for fully 90 per cent were stricken with malaria. The last inhabitants of these desolated regions, because of the knowledge inherited from past generations, did not dare stay out in the open at night, nor would they sally forth until the sun was well above the horizon, and not until it had dispelled the malevolent influx that had risen from the marsh since sundown. Popular belief, and the unorganized knowledge of so-called scientists sought the origin of this pestilence in the mire which was more or less mixed with sea water, and was always stagnant in the muddy regions where nocturnal vapors and the invading putrefection of human and vegetable detritus saturated the air.

The hypothesis of the Latin physicians, Varone, Vitruvio, and later Columella, in his treatise "De Rustica" were rejected without regard, although reaffirmed by Mercuriadis and Paracelsus, and much later again by Lancisi and Torti (16th century); they asserted that the marsh fevers of Italy were due to small animals being generated in the putrefying vegetation, infesting first the air and then the blood of men.

Considering what science has now affirmed, does not the lucid intuition of the Latin physicians, lacking our modern means of research, appear amazing? Naturally the pretentious researchers of the 19th century did not like to accept the hypotheses of Lancisi, which were mere philosophical conceptions, unsupported by microscopic researches. Understanding this, one does not wonder that Colin expressed doubt before the Academy of Medicine of Paris on presenting Laveran's preliminary reports as to the origin of the malarial parasite. In 1880, science had accomplished nothing more than to change the name of the disease, calling it marsh fever, "Palustral Fever," instead of malaria.

In reality one must admit that the members of the Academy were kind to the youthful revolutionists, perhaps because they sought peace, but also because of reverence for his father. "A bien reflechir," Roux wrote to him, "je trouve que vous n'avez pas lieue de vous plandre; apportant une chose aussi neuve, vous meritiez d'etre encore plus malmené."

Criticism is at all times severe; discovery carries within itself a feeling of bewilderment; innovation reeks of the revolutionary, and old age harbors scepticism, ignores and repulses enthusiasm, and remains fixed in its own belief until a new discovery carries away the young, drags along the old, and opens the field to a new conquest. Such is the usual sequence of every new scientific endeavor.

Nor could the name of Laveran, already renowned, cause a change in the minds of the judges who yielded only when in the following year at the same assembly on that memorable October 24, 1881, Laveran presented his paper, which has remained famous in the annals of medicine. "Déscription d'un nouveau parasite découvert dans le sang des malades atteints d'impaludisme." A manuscript which is so monumental in its clarity and vividness, and so richly illustrative in its synthesis, that it remains even today a marvelously written document of a discovery.

This greatest "Researcher" had rightly noted when he focused his eyes upon the blood specimens of the soldier of Constantine, that disease which for him *edecuit succurere vitae* and which showed those "élements filoformes ressemblant a des flagellés, qui s'agitaient avec une grande vivacité, en déplacant les hématies voisines" from which he was convinced that he was dealing with an intracellular parasite.

Destined to render service in Constantine it was but natural that he should study those marsh fevers which, more than anything else, force themselves upon the attention of a physician when he arrives in Algeria. And since up to that time the histological alteration produced by the marsh fever had been neglected, it was in this very field that the true path along which to attack this ancient question was to be found. The numerous examinations performed for two whole years at Bone, Biskra and Constantine, on malaria patients, only showed pigmented substances circulating in the blood "maleniferous leucocyte." The same however was known through the experiments of other observers. The post-mortem blood did not bring to light any possible solution to the question, and consequently Laveran directed his researches to freshly withdrawn blood.

The outcome of the research is well known; first the crescent and round elements; then the mobile filaments of a distinctly animal character with

FIG. 1. MILITARY HOSPITAL OF CONSTANTINE. COURTYARD AND GARDEN.

their characteristic morphology, came under his observation; then the liberated pigment granules and finally the relation of all these elements to the disease; the febrile reaction, the action of quinine on the hemopoietic organs, and the post-mortem changes. The way was open for still further research along the path already mapped out a century before by Lancisi and abandoned for some unknown reason.

The Lancisi parasite carried the idea of animal origin of this disease, being diametrically the opposite of the vegetable conception of bacteria which Pasteur and his school so hastily preached. Very much perplexed scientists refused to accept the idea that protozoa of the amebic type could be the cause of a disease; and consequently, the following year, Laveran was compelled to continue his studies in Italy (Roman campagna) and to become further convinced that he had fallen into no error. For he found hematozoa in the blood of persons suffering with malaria. The confirming results by other researchers poured in from Philippeville, from Russia, from the United States, from Italy, and from every region infected with malaria.

The succeeding events of the discovery are known to all: Laveran's trip to Italy, for the sole purpose of control; the cordial collaboration with Baccelli, who became his intimate friend and admirer; his meeting with other Italian research workers, Bastianelli, Grassi, Marchiafava and Golgi, to whom we owe the superb studies of the schizgonic phases of the parasite.

The path had already been strewn with imposing milestones, numerous observations had already been made on the intracellular development and on the action of quinine, and there was no longer any doubt of the fact that the spleen acted as a refuge for this parasite. In spite of all these observations little was known of the method of transmission, to which was attached the important problem of prophylaxis. And here we must justly recognize Laveran's merit in the proper isolation of the mosquito and its function as intermediary host, although it had already been blamed by Sir Patrick Manson as the carrier of Filaria.

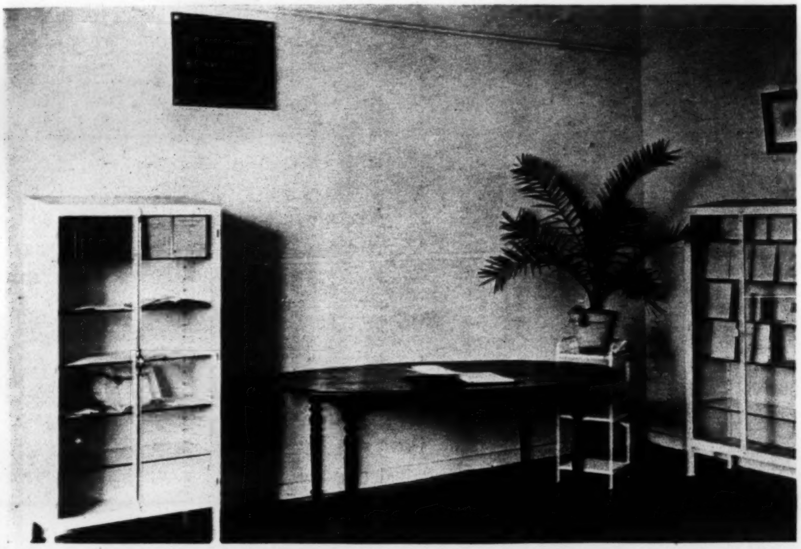

FIG. 2. LABORATORY OF PROF. LAVERAN IN THE MILITARY HOSPITAL OF CONSTANTINE WHERE HE MADE HIS FAMOUS DISCOVERY OF THE MALARIA PARASITE.

Laveran spoke about it in his "Traité des fièvres palustres" published in 1884. Then he hastened to isolate the parasite from the air and water and he thus became so convinced of the importance of the mosquito as a carrier that he again spoke about them in 1894 at the Hygienic Congress at Budapest. In America he was supported by the authority of King, and in England by Sir Patrick Manson and Ronald Ross. When the latter discovered in the Culex the first pigmented elements, he as a true scientist hastened to give full credit to Laveran as the first to indicate the developmental cycle of the malaria parasite outside the human body.

Two years later in 1897 MacCallum made interesting researches on the sexual cycle of the Plasmodium falciparum. The researches of Ross were later verified and completed by Bignami, Bastianelli, Golgi, Grassi, Koch, then again by himself and Laveran, whence the relation between Anopheles and malaria became definitely established.

To Laveran we owe the doctrine of the "Unité du Paludisme" and the descriptions of the various clinical forms, his fundamental conception of prophylaxis and cure (which give him the greatest right to be numbered among the greatest benefactors of mankind). His is the merit of having founded a new school; a school to which we are proud and honored to belong, last of a long line of pupils among whom shine the chosen disciples of the new school of protozoology. A new era has been opened and through fields freed from prejudice were freely brought to light the arthropoda as the carrier of many tropical and sub-tropical diseases, of the various forms of relapsing fevers, of yellow fevers, and of trypanosomiasis and leishmaniasis. Alone, or in collaboration with M. Mesnil, even as early as 1892, Laveran had called attention to the numerous types of trypanosomes and their probable cause of disease, describing fully thirty species. At the time only one pathogenic trypanosome was known, the Indian horse disease called surra, and its specificity was even doubted. It was then believed that vertebrates were their exclusive hosts, while their evolution was ignored, and confused with that of the Trichomonas species.

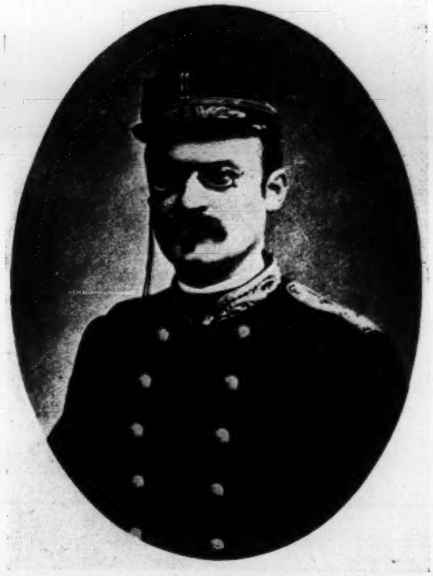

Fig. 3. Prof. Laveran as a Captain When He Made His Discovery of the Malaria Parasite.

It was necessary to exclude from the classification of these hematozoas all the species which had been described up to that period. To Laveran we owe the happy attempt at a classification of these mammalian hematozoas. Making a distinction between pathogenic and non-pathogenic, he was able to divide the first in trypanosomes of small mammals, type of Lewisonella, which were characterized by the fact that they could not be inoculated from one species to another; the second into bovine trypanosomes, with their two species (Theileria and Ingens). He then subdivided the pathological trypanosomes into three large groups according to the formation of the anterior extremities.

To speak of the innumerable researches upon the structures of all the varieties of trypanosomes studied by Laveran would be an arduous undertaking, while to attempt to give but a mere résumé in a short lecture would be to minimize the worth of this great scientist. Morphology and the action of the known flagellates and many new ones have been accurately classified and described in the intermediary and final host together with the efficacy of curative and prophylactic measures.

There is no question that escaped this keen observer, who was far ahead of his time in establishing the basis of this new branch of pathology. The investigations on leishmaniasis follow logically. A volume, published in 1917, contains a résumé of all that was known about them up to that time; but beginning in 1880, the *Annales de dermatologie et de syphilographie* contained one of his studies on Biskra button, oriental sore, whose clinical forms are described, showing that the domestic fly acted as a mere mechanical carrier, instead of being an intermediary host for the parasite. These characteristics also belonged to hematophagic insects such as bedbugs, Stegomyia and sand-flies. But only after the almost contemporaneous discovery of Leishman and Donovan who isolated the causative protozoa of kala azar, and the first blood preparations which were sent to him by

Donovan, made it possible for Laveran in 1903 to present to the Academy of Science of Paris the result of observations which he had carried on with Mesnil. This observation justly caused the coupling of the two names and the recognition of both Englishmen as having been the first ones to isolate the parasite. And like the trypanosome, the Leishman bodies were the object of his keen observations and research. So at the meeting held on March 22, 1904, after the examination of the blood preparations which Dr. Chatoir had obtained from the spleen of a seven month's old baby who had died at Tunis, Laveran was able to present before the Academy of Medicine of Paris, the final conclusion which showed that the virus was the same; the Indian kala azar is also an endemic disease prevalent in many regions of the Mediterranean basin. Animals susceptible to Mediterranean kala azar could be infected with the Indian form as well, with a slight difference from the point of susceptibility of a certain species of animals to the two viruses.

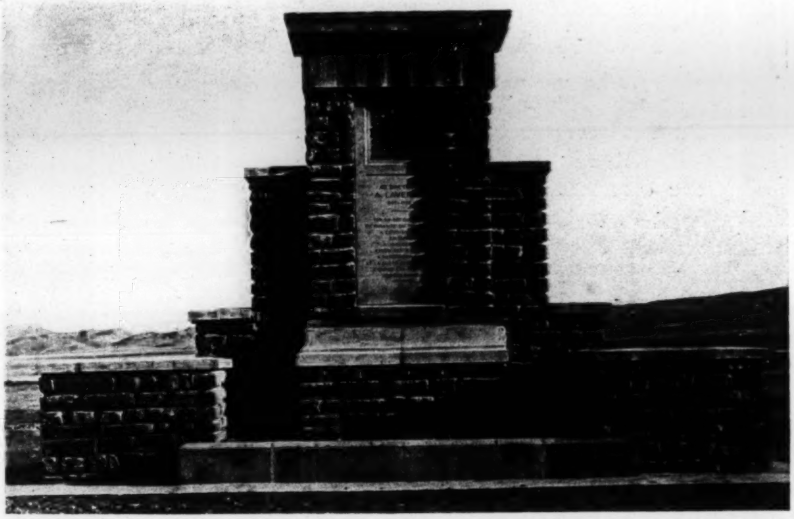

FIG. 4. COMMEMORATIVE TABLET TO PROF. LAVERAN ERECTED IN TIMGAD, NEAR BISKRA, DEDICATED IN MAY, 1930, ON THE FIFTIETH ANNIVERSARY OF THE DISCOVERY OF THE MALARIA PARASITE.

As to leishmaniasis of the dog, Laveran proved that the infection produced in this animal by the canine virus has many resemblances to those produced by human virus causing kala azar, either Mediterranean or Indian, and which, transmitted to white mice, produced identical visceral lesions localized principally in the spleen and liver, and which with Leishman's culture grow only with difficulty.

Carefully studying the morphology of the L. Donovan, of kala azar and L. Tropica of oriental sore, Laveran established the fact that the two parasites were identical types in their respective flagellated and non-flagellated forms and showed how one or the other form might be obtained.

I was a direct witness of his scientific activities when I had the honor to be his collaborator in his studies upon the Herpetomonas and Chritidie at which time we were fortunately successful in infecting mammals with flagellates, found in vertebrates from several of which we were able to obtain cultures.

Our first experiments brought us to the conclusion that the Leishman and trypanosomes of vertebrates have their origin, at least in part, in the flagellates found in invertebrates.

And this is not all. Desirous of examining the organisms floating in the air, in 1891, Laveran constructed his aeroscope which permitted him to count the organisms floating free in the air. In the following year, with Catrin, he discovered a diplococcus which is perhaps the causative agent of mumps; he then occupied himself with the alteration in the platelets of the edible frog, which he found to be due to Bacillus Krusei. He discovered in the Transvaal bovines the presence of Spirillum usually associated with the Piroplasma bigeminum of the Trypanosome theileri and also noticed that the bovine piroplasm is transmitted by ticks and in Transvaal by the Thipicephalus decoloratus. In 1902, he studied a mycetoma with large granules found implanted in the foot of a negro (Madurella mycetomi); in 1906 he found a mycetoma with granules (Nocardia Pellettieri; in 1910, a spirillum of a monkey Cercopitecus patas (Sp. Pitheci).

We owe to his varied activities a treatise on the diseases and epidemics of armies[1] published in 1875, besides keen observations on typhoid and paratyphoid, on acute tuberculosis and its prophylaxis, on parotitis, diphtheria, grippe, dysentery, hepatic abscess, scurvy, attenuated hydrophobia, and on heat prostration.

In 1896 he published a treatise on Military Hygiene and we must not forget his doctorate thesis on the regeneration of nerves. Of extreme importance also is his contribution on hematozoas after his work on the malarial forms. We will recall his research and final discovery of the malarial infection in birds, Piroplasmas, Hemogregarinae and Toxoplasmae, and his enumerations of the causes of errors which may occur because of the alteration in the red blood cells more or less indicated by the names "état vacuolaire, hematies nuclées et mouschtée" (corps de Graham Smith), anaplasm, "marginal pointu," hematoblasts.

In 1906 the Fifteenth International Congress of Lisbon conferred upon him the Moscow prize, and the following year the Royal Caroline Institute of Stockholm awarded him the Nobel prize in Medicine. He could be very well called the father of protozoan pathology and as such, he should have been furnished with a laboratory. He provided that need himself with the Nobel prize revenue and later the Board of Directors of the Pasteur Institute housed him on the second floor at 96 Rue Falgiuère where we had the great honor to see him work with the devoted soul of a student and admirer.

Conscious of his mission, free from any petty sentiments of jealousy, he loved, as a true teacher, to associate with his name, those of his pupils, whom he called "Collaborators" allowing them to share the honors of so many original observations and discoveries, which were to a great extent the fruit of his own genius which never forsook him even to the very last days of his painstaking, arduous life of study. He had the pleasure, at the age of seventy-seven, only a few months before the end, which he stoically foresaw and expected, of giving to the press some experimental works, the last of the long series of more than 600. At his deathbed were Dr. Claire and some pupils including the writer, who trembling shared those hours of anguish with his dear good wife, the veritable angel of devotion and love, light and warmth of his domestic hearth. In the weary mind of the master, when a cloud obscured his vision, there must certainly have come to life, all the memories of his entire past. He saw Metz, besieged by the Prussians and the futile horrors of the war, the hospitals full of the suffering sick and wounded amongst whom septicemia, erysipelas, gangrene, dysentery and typhoid took their toll. With every kind of privation a struggle was waged against disease, in spite of the dire lack of food supplies, linen, medicines, sugar, milk and even bread. Only horse meat was obtainable and in place of salt a detestable tasting broth. Two months of siege, the surrender, the liberation and again Paris, the Commune, the frantic mobs behind the barricades, the bombardment of the military hospital, all increased the misery of the patients. One after another the Tuilleries, the Hôtel de Ville, the Prefecture of Police, the Granary, Town Hall, the Theatre of the Porte Saint Martin burned mercilessely, enclosing in a circle of fire, the unfortunate ones in the hospitals, the more able of whom sought safety in hasty flight. Then peace and fifteen years of study and travel in France, Algeria and Italy, the eager desires that accompany discoveries, the joys of victory and its honors. Kind destiny which protected him, carried him with passionate desire over the battlefields of Metz, and there above the horrors of a defeated army, a flower appeared, Mademoiselle Pidançet, whom he saved from servitude to the enemy, and carried to the altar. She was the devoted companion of his life, who together with his blind sister knew well how to understand and accept her mission at the side of the scientist, whom she made happy with her unlimited devotion. She still lives in Paris.

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[1] Traité des maladies et epidemies des armées.

His scientific career lasted for fifty-five years, almost fifty years of which he spent as a teacher. Both France and the world, as well as his collaborators, whom he knew how to attract because of his fascinating character, and with whom he lived and worked in perfect harmony, are his debtors in the glory he shed upon the progress of civilization. Among them it is a pleasure to enumerate R. Blanchard, F. Mesnil, Vallé d'Alfort, M. Marullaz, Thiroux, Phisalix, Roubaud, Bagnard, Vaillard and myself, who had the honor to be with him for ten years and to be the recipient of his last confidences and wishes. Mme. Phisalix has collected in one volume a résumé of the master's life, including some of his work. We do not believe we can in such a brief lecture express the full measure of our gratitude, and there is still in our hearts a large store of devotion for him, who directing us in the road of science unfolded its mysteries to us.

His brilliant mind which did not fear doubt, was a result of a happy sympathy with his father, a professor and the late Director of the military Hospital Val-de-Grâce, a direct descendant of many soldiers, educated by the revolution and the first Empire. It was a family of scientists and heroes, who united to bring forth the soul of the great Master and to send him forth upon the most hazardous trials, where invisible and dangerous disease, not less than the plots of the enemy, required keenness, foresight and sacrifice.

Laveran was born in Paris, on June 16, 1845. He completed his pre-military courses at Luxemburg, on the plains of Metz, and in Algeria, and we know how much the latter influenced his career. He brought to a close his classical studies in the Lycée Louis-le-Grand and in 1863 his heritage first led him to the paternal career and later to that of military physician, which he held for twenty-nine years.

The exigencies of the service failed to divert him from his work. Consequently as teacher he was able to give counsel and to direct the various phases of military sanitation and he later occupied the chair (which had already been held by his father) of Epidemics and Diseases of Armies, and later that in the Val-de-Grâce Military Hospital.

In 1907 having obtained his release from the army, he became Director of the Honorary service of the Pasteur Institute, and was able to found the "Société de Pathologie Exotique" the Presidency of which he held for twelve years, in the house in Rue Falguière, where was the laboratory of Tropical Medicine which he had endowed with his Nobel Prize of 100,000 francs. On his seventieth birthday we all took part in the interesting ceremonies of the jubilee which was tendered him by the Pasteur Institute.

The world war found him at his work table, nor did advanced age keep him from multiplying and diversifying his many energies, giving instructions for the maintenance of the health of the armies, presiding over commissions, making trips of inspections and in addition attending to his scientific researches. One of his dearest pupils, Dr. Roudsky, his collaborator, indefatigably active in his researches on trypanosomes, too early snatched from science, died on the battlefield.

The "Société de Pathologie Exotique" has contributed much to the knowledge of tropical disease and will, of necessity, continue to enlighten the world under new directors who will continue that accelerated rhythm of harmonious activity imparted to it by the scholarly guidance of the founder, who ploughed the first furrows and planted the first seeds. There is just cause for our pride in recalling the address delivered by the master then seventy-six years of age, at the solemn sitting of the Academy of Medicine of Paris, of which he was President, at the centennial ceremonies of the founding of that Institute.

Laveran was member of every scientific academy in France and of numerous institutions. In 1907 he received an honorary degree from the University of Liverpool.

His memory was honored by the celebration this year in Algeria on the fiftieth anniversary of the discovery of the malaria parasite. All Algeria and Constantine, especially where the soldiers, in whose blood the hemospozoid was first found, fell ill, have worthily honored the great scientist. Together with all the physicians who, with their work often crowned by sacrifice, contributed to the redemption of the country and its economic rejuvenation.

To the writer belonged the special honor of commemorating the beloved master in the name of his pupils in the very hospital of Constantine where Laveran made the notable discovery that has rendered him immortal.

Praise to the Great!

PAP AND PANADA*

By T. G. H. DRAKE, M.B.

TORONTO, CANADA

IN A previous paper[19] mention has been made of the use of pap and panada in the feeding of infants. However these substances made up such a large portion of infant feeding materials even as late as the early years of the 19th century that further note of their composition, preparation, use and abuse is felt to be justified.

Pap consisted of flour or bread cooked in water with or without the addition of milk. The term panada was applied to preparations of various flours, cereals or bread with butter or milk which usually were cooked in broth. With some authors the two terms were synonymous.

The use of panada and pap is of great antiquity. Vallembert[1] in 1565 stated that panada was one of the most ancient prescriptions known for the nourishment with milk during the first two years of life. He quoted Galen as having prescribed for the infant bread soaked in the broth of flesh or legumes. Vallembert dated the use of pap from about 1465 and in 1565 stated that it had become very popular, "and though some think it good for infants others hold it to be bad."

De Claubry[2] in 1783 wrote the following: "It is more than three centuries since the most learned authors and the most experienced men have prescribed pap and have not yet stopped forbidding it. But habitude and prejudice are, of all wrongs which affect humanity, the most difficult to destroy."

Ettmuller[3] in 1698 described the usual method of feeding pap. "The nurses in taking it into their mouths dilute it with their saliva and place it after that in the infant's mouth. Finally to better dilute the pap and facilitate its digestion they give them the breast." Ettmuller admitted that the mixture of saliva with the pap would be useful if the nurse were always healthy but on account of the danger of contagion where the least trace of scurvy affected her gums or saliva he felt difficulty in permitting this mastication, by the nurse." However this method of feeding continued since in 1776 Conyers[4] wrote against this method of feeding in almost the same words that Ettmuller had used.

The quantity of pap fed was large. Smith[5] in 1792 wrote of the mother protesting when he advised the limitation of the amount of milk during the first two weeks of life. "What, allow a child only a pint of milk a day! Why it would eat 2 quarts of pap, and still cry for more." He asked, "Surely it is wrong to put a large boat full of pap into their little mouths suffering them to swallow the whole of it in a minute and then from their cries to ply them with another which is no sooner down than it is thrown up again."

Paps and panadas were fed from the spoon and boat. A specialized form of spoon made in pewter of a date around 1800, is shown in the first illustration. This was filled, the lid closed and the speed of the feeding controlled by the pressure of the finger on the end of the hollow handle. I have been informed by more than one dealer in pewter that the hollow handle was also used for blowing the contents of the spoon into the child's mouth.

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*From the Laboratories of the Sub-Department of Paediatrics of the University of Toronto and the Hospital for Sick Children, Toronto.

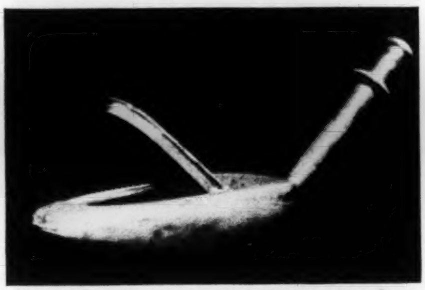


Fig. 1. Pap Spoon, *ca.* 1800. Before Use Slit in Tip of Spoon Is Enlarged by Cutting with a Knife.

Pap boats were made from pewter, silver and pottery. Various types are shown in Figure 2. A and B were made from pewter and date from about 1780. C and D are in silver bearing London makers' marks of 1800 and 1801. The boat on the extreme right is made of Sheffield plate and was made around 1830. Their usual content was from 2½ to 3 fluid ounces. The composition of pap and panada as recommended by various authors varied greatly and will be taken up chronologically.

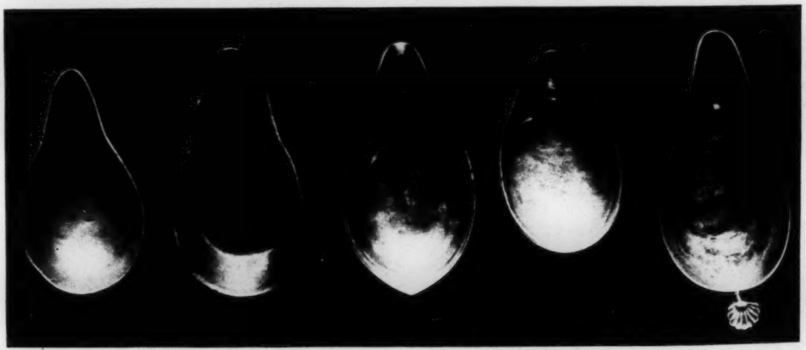


Fig. 2. Pap Boats in Pewter, Silver, and Sheffield Plate.

Vallembert, 1565, recommended the following recipe for making a panada, "suitable for nourishing the infants of princes." "One grates a crumb of bread very small, then one puts it in a bouillon of good flesh in a small glazed earthen pot and puts it to cook on a small charcoal fire without smoke. Sometimes it is cooked in a bouillon of peas or other legumes, with oil or butter, and more often it is cooked with goat's or cow's milk or milk of sweet almonds. Others mix with the panada an egg yolk or the entire egg." Vallembert gave the following directions for making pap from flour or bread crumb and cooked in milk.

> The flour of which it is made nowadays the greater part of the nurses pass simply through a sieve without other preparation. Others cook it in the oven in a leaded or vitrified earthen pot after the bread is drawn, to finally take away the viscosity which is in the crude flour. The milk mixed with the flour is commonly from the goat or cow, that of the goat is better. When one intends to add more nourishment one adds finally an egg yolk, when one wishes to guard against constipation one adds honey.

Ettmuller[3] in 1698 "Detests above all the use of crude flour which having been mixed and cooked with water or milk and reduced to the form of a paste gives only a viscous and crude paste more proper to binders to bind their books than for the nourishment of infants." He found by several experiments that a very useful and nourishing pap consists in taking in place of flour, white bread dried and crushed, cooked with milk or water to the consistence of pap and to which is added a little pulverized anise seed.

In 1754 Brouzet[6] cautiously recommended the use of pap as prepared by Van Helmont. This was made from bread lightly boiled in beer or wine, with meal or sugar added, reduced to a mucilagenous consistency.

Ballexserd[7] in 1762 recommended the use of baked flour in the preparation of pap "of a less injurious usage than that made from crude flour." He believed however that crême of rice, or dried bread well cooked in beef bouillon or in fresh milk or at other times in fresh butter to make a panada or species of pap was a more preferable food for infants.

Raulin[8] 1769 went into detail regarding the different varieties of pap.

> One makes good pap with light bread well baked and well fermented. The leaven divides and reduces the tenacious particles of the flour. The fermentation which it produces in the paste disengages a large part of the air which was held there. It is this that renders pap so made more proper than all others for nourishing infants. One prepares it by boiling bread broken into morcels in water into which one puts a little oil or butter following the usage of the country. One reduces it over a gentle fire to the consistence of a jelly or of a light panada. The bread ought not to be freshly baked; it is better when three or four days old. One ought to smooth the pap with brown sugar or honey or indeed with loaf sugar if the infants are threatened with diarrhoea. One also makes pap with wheat biscuit which one knows under the name of sea biscuit. One cooks it with pure water in an earthen vessel stirring with a wooden spoon until the material is reduced to a jelly. In place of biscuit one slices well fermented bread, and dries these slices at the fire. One powders it and keeps it in bottles or other vessels in a dry place. When one wishes to serve this powder one takes an amount of powder suitable to the quantity of pap which one wishes to prepare, one softens it with luke warm water and reduces it over a low fire to the consistence of jelly. One regards with reason the flour of malted wheat as very good to make pap. It is prepared like the preceding.
>
> One ought to fear that pap made by the admixture of milk would become more likely to cause colics than it is by itself.

DeClaubry,[2] Surgeon to the Count of Artois, gave the following directions for making panada in 1783.

> Panada is made in different fashions with bouillon and bread, and also is made with water, butter and bread to which one sometimes adds an egg yolk and a little sugar. One puts the whole to boil in a glazed earthen pot which is used only for this purpose and cooks well over a small fire stirring gently with a spoon. The crèmes of rice, barley, oats, semolina, vermicilla are the farinaceous substances which are most proper for the nourishment of the infant given well cooked in bouillon.

William Moss[9] in 1794 sounded a warning against the use of bread containing alum.

> Care is necessary to the choice of the bread: it should be free from alum, which is sometimes put in bread to make it white, it should not be too fine, nor too coarse. The bread should be made with yeast, without butter, or any kind of seeds, and very light. Hard biscuits, com-

monly called crackers, are sometimes given but they are heavy, owing to their being made without yeast and not fermented.

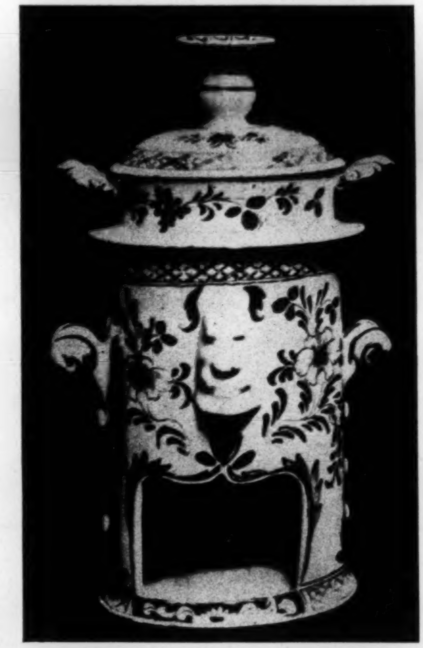


FIG. 3. PAP WARMER, *ca.* 1750.

Gardien[10] in 1807 gave the directions for the preparation of cream of bread, a species of panada recommended by the faculty of medicine.

The manner to make this cream consists in taking a wheaten loaf which one divides in the centre to dry by baking: next one steeps it in water for six hours. It is then pressed in a cloth. It is placed in a pot and is boiled in a sufficient quantity of water for eight hours, taking care to stir the whole from time to time with a spoon and to dilute with warm water as it is thickened by the fire. One adds a pinch of anis and a little sugar in the proportion of 59 grains of anis and an ounce of sugar per pound of bread. Finally one passes the whole through a hair sieve. When this cream is served for the nourishing of infants one should take care to reheat each time only the necessary quantity.

Gardien quoted Alphonse LeRoy's directions for the making of a panada which was of great value as a complementary feeding. "One commences first by making a bouillon with a piece of veal and 2 or 3 ounces of beef. One next takes the crust of bread which has been well boiled and one adds the bouillon according as it swells, one ought also to add aromatics. One salts this bouillon only with sugar."

James Hamilton[11] of Edinburgh, in 1813 mentioned the use of oatmeal. "After weaning the common preparation of oat-meal called pottage or porridge, till within these few years much used in this part of great Britain, is in general too difficult of digestion for infants, unless a proportion of barley-meal be mixed with the oat-meal."

A pap warmer, *ca.* 1750, in English Delft pottery, made in Bristol, is shown in the third illustration. It is in three parts: the piece which accommodated a small lamp, the bowl with flange and the lid with a candle holder on top. The height is 10¾ inches.

Paps and panadas were used as supplementary feedings, as the sole feeding in dry nursing, as therapeutic feedings and to prepare for weaning.

Many authors recommended pap and panada as a supplementary feeding.

Harris,[12] 1742, had found that, "from some sort of active ferment in their stomach their appetite is so voracious, I had almost said insatiable, that liquids alone are not able to satisfy it. It must either be blunted with some oily substance, such as butter, or the child must be nourished with panada, hasty pudding or the like which stay a considerable time in the stomach."

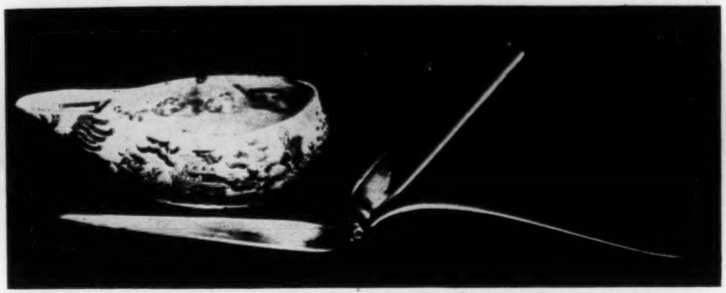


FIG. 4. PAP BOAT IN WILLOW PATTERN POTTERY AND A PAP SPOON IN BRITANNIA METAL. *ca.* 1830.

Buchan,[13] a very modern physician, in 1776, in his "Domestic Medicine," stated that "After the third or fourth month it will be proper to give the child once or twice a day, a little of some food that is easy of digestion: as water pap, milk pottage, weak broth with bread in it and such like." William Moss[8] in 1794 recommended the addition of bread to the infant's food from the end of the second month, the amount of bread added being increased in proportion as it seemed to agree with the infant. Gardien,[9] 1807, who regarded pap "when it is well made as one of the best foods which one can give to the infant," also recommended it as a supplementary feeding. Gardien quoted Doublet as having always employed it with success as a supplementary feeding.

In 1754 Brouzet[6] had revived the use of pap made with beer, not only as being preferable to animal's milk, but had recommended it in place of woman's milk to prevent the passage of evil passions and longings to the infant.

Raulin[5] in 1769, stated:

> That one ought to fear that pap would become by the admixture of milk more likely to cause colics than it is by itself. It is true that milk blends perfectly with it but it communicates with equal facility the bad qualities to which it is susceptible. Infants run a double danger by such a mixture. They gain much if it is not done. Pap without milk is sufficiently nourishing up to seven or eight months. Then one ought to commence to give to infants light panada with some egg yolks, next passing to the soups.

Gardien,[10] 1807, stated, "There are some who have proposed to take away in the artificial feeding of infants all varieties of milk and to substitute to nourish the new born a species of panada known under the name of crème of bread." This had been recommended in the hospital at Aix by the Faculty of Medicine to diminish the mortality of the foundlings. He also quoted M. Halle as having made the observation that pap was preferable to the use of cow's milk.

As a therapeutic measure, Gardien[10] states that there are plenty of circumstances where pap was preferable to cow's milk. "A moderate use of this food especially when the child is not accustomed to it is the best means to stop certain colics, certain diarrhoeas when the stools are green."

As a preparation for weaning, Alexander Hamilton,[14] 1792, made the observation that "With the view of introducing a change of diet by degrees, the practise of early beginning to give the child a little pap or panada appears to be rational: for when it is neglected till the time of weaning approaches, the habit is with difficulty established: and there is great hazard that the infant may suffer from the sudden change."

The writers who were unfavorable to the use of pap condemned it in no uncertain terms. Astruc,[15] 1746, stated that the infants should not be glutted with pap in the first months since it turned to a crude indigestible chyle. Ettmuller,[3] 1698, and Baxellserd,[7] 1762, wrote against the use of pap made from unfermented flour. Ettmuller wrote that the milk which the infant sucked after the unfermented flour was corrupted formed a cheesy clot and finally the whole digestion was disordered. Baxellserd pointed out more serious consequences.

> The pap which one gives to them in the first 2 or 3 premier years of their life is a nourishment extremely gross and indigestible for them, it is a species of mastic which may engorge the narrow routes which chyle takes to mix with the blood. It also obstructs the mesenteric glands, because the flour of which it is composed has not yet been fermented, it coagulates in the stomach, covers it with glair and engenders worms.

Similar opinions were expressed by Von Rosentein,[10] 1776. "Meal pap is never to be given to any child. It is too gluey, tenacious, and slimy a food, and causes obstructions in the mesentery, hardness of the stomach, acidities, wind, and many other indispositions, by which we lose at least the one half of our children." Landis,[17] 1781, wrote against all species of pap. "One cannot but see that pap of whatever species, always heavy, viscous and indigestible is only proper to give infants very grave illnesses." DeClaubry,[2] 1783, was content to say "that pap is the most dangerous of all the foods for infants, that it has caused to perish a great number or has rendered them infirm and diseased for their whole lives." As late as 1807 Herdman[18] spoke very feelingly against paps. "The stomach of an infant could almost as soon digest stones as it could digest panadas, aleberries and gruels. They never fail to produce the most severe and destructive diseases, first in the stomach and bowels and then throughout the whole frame."

The various authors not only wrote in support of their theories and observations but attempted to spread them in other ways. Ballexserd[7] in 1762 urged as a means of instructing nurses in the theory and practice of infant feeding, "That if one obliged the pastors of churches in the country to instruct themselves on this important subject and to instruct in their turn the nurses on certain days they would apprehend them through these elementary instructions." However in spite of the great preponderance of opinions against the use of pap James Hamilton wrote in 1813,[11] "Panada and pap be now almost universally used for the first food of infants, as a substitute for the mother's milk."

A pap spoon in Britannia metal and a boat in willow pattern pottery, both dating from about 1830, are shown in our final illustration.

REFERENCES

1. de Vallembert, S. Cinq livres, de la manière de nourrir et gouverner les enfans des leur naissance. Poictiers, 1565.
2. DeClaubry, C. D. G. Nouvel avis aux meres qui veulent nourrir. Paris, 1783.
3. Ettmuller, M. Pratique speciale de médecine. Ed. 2, Lyon, 1698.
4. Conyers, R. Dissertation sur les maladies des enfants. Paris, 1776.
5. Smith, H. Letters to Married Women on Nursing and the Management of Children. Ed. 6, London, 1792.
6. Brouzet, Essai sur l'éducation médicinale des enfants. Paris, 1754.
7. Ballexserd, J. Dissertation sur l'éducation physique des enfants. Paris, 1762.
8. Raulin. De la conservation des enfants. Paris, 1769, vol. 2.
9. Moss, W. An Essay on the Management, Nursing and Diseases of Children, from the Birth. Egham (England), 1794.
10. Gardien, C. M. Traité d'accouchements, de maladies des femmes, de l'éducation médicinale des enfants. Paris, 1807, vol. 3.
11. Hamilton, J. Hints for the Treatment of the Principal Diseases of Infancy and Childhood. Ed. 2, Edinburgh, 1813.
12. Harris, W. English trans. in: "A Full View of All the Diseases Incident to Children." London, 1742.
13. Buchan, W. Domestic Medicine. Ed. 5, London, 1776.
14. Hamilton, A. A Treatise on the Management of Female Complaints and of Children in Early Infancy. Edinburgh, 1792.
15. Astruc, J. A General and Compleat Treatise on All the Diseases Incident to Children. London, 1746.
16. Von Rosentein, N. R. The Diseases of Children and Their Remedies. English trans., London, 1776.
17. Landis. Dissertation sur les avantages de l'allaitement des enfans par leurs mères. Geneve, 1781.
18. Herdman, J. Discourses on the Management of Infants. London, 1807.
19. Drake, T. G. H. Infant Feeding from 1750 to 1800. To be published.

A FRONTIER PHYSICIAN—JOHN FRANCIS DELONG

By C. I. REED, PH.D.

CHICAGO, ILL.

DURING a recent visit to his boyhood home in southeastern Ohio, the author had his interest revived in a pioneer physician of considerable local importance. This account is presented, not because this man exercised any influence on medical science, indeed he was probably unknown beyond the pioneer community in which he lived; nor because of any lasting contribution to medicine as a profession; but because he is typical of a large group of men who served the medical needs of the frontiers and contributed immeasurably to the welfare and happiness of the state builders who wrested a meager livelihood from the wilderness and laid the foundations for the expansion of civilization in the New World.

John Francis Delong, a descendant of a companion of Lafayette, was born at the beginning of the nineteenth century. His exact birthplace was probably in Maryland, although there is some claim that he was not born until his family had moved into the region now comprising the northeast extremity of Noble County, Ohio, when his father took up a large tract of land, part of which passed into possession of the son in 1826.

John was a devout Catholic. Whether he acquired any education beyond that obtainable in the frontier log school house is very doubtful. However, specimens of chirography that have been preserved show him to have been a good penman. When and how he began to evince an interest in medicine cannot be determined for there were no family records of any such activities and public records reveal only legal transactions involving land transfers. Probably, like many other such figures, he was compelled by necessity to give attention to medical needs because there was no other source from which relief could be obtained.

At some period, which must have been quite early in life since there were no Indians in this part of Ohio after the second decade of the last century, he acquired from his primitive neighbors a considerable number of botanical prescriptions which formed the basis of his professional equipment. His contact was probably with roving bands of the Seneca tribe. At some later period he acquired a "family doctor book" which was in the possession of his family after his death in 1872 but which has since been lost so that not even the name of the author is known. From these two sources, together with hard frontier experience, he acquired his fund of practical knowledge.

His vocation was, of course, that of woodsman and farmer, but he was always at the call of his neighbors in distress or affliction and the old timers recounted many stories of how he interrupted his labors in the field to apply some emergency remedy.

Of his equipment there remains only a dental turnkey and a small set of apothecary balances which in the later stages of his career were used to weigh out the dried herbs used in concocting his medicines. However, these were probably more valuable, as professional insignia, then necessary for pharmaceutical activities, as he was quite as successful at compounding by guess as by weighing with the balances.

On one occasion, in his later years, a neighbor's wife came to him as he worked in the field, suffering intensely from an ulcerated tooth. He immediately dispatched one of his sons, a mere lad, to the house for his turnkey. Upon the latter's return he seated the patient on a stump, applied the instrument and the lady departed again to her home.

When the Baltimore and Ohio Railroad first was extended across the mountains into Ohio, a construction camp was established near Delong's home. When an epidemic of "bloody flux" occurred among the workmen, he was called upon to render professional service. This event probably represents the acme of his professional career for his methods proved remarkably successful except in the most advanced cases.

His Indian prescriptions were known only to him. If ever committed to writing they were lost later for not even his children were acquainted with the constituents. Probably these same prescriptions came into the hands of others and were thus preserved, but even so they cannot now be identified with Delong's prescriptions.

His racial heredity, his religious training and the primitive life of the frontier combined to make of him something of a mystic. Consequently his professional activities were strongly permeated with an element of what would now be charlatanry. But underneath that was a strain of sound common sense and keen observation. Moreover, this element was not peculiar to practitioners of Delong's type for even the great Beaumont sometimes displayed similar tendencies.

His jackknife was an important part of his equipment and was employed on live stock and human beings alike. This instrument was especially important in smallpox vaccinations. There are still extant stories of how he carried in his pocket two pieces of window glass sealed together with putty, between which were preserved the virus in the form of scabs obtained from previous successful "takes."

Whenever and wherever a neighbor approached him to be vaccinated, he scraped the skin with his knife and applied a small piece of a scab. This method, crude as it was, seems to have been remarkably effective for smallpox was rare in the region during his time and there are no accounts of any serious consequences to any of his patients.

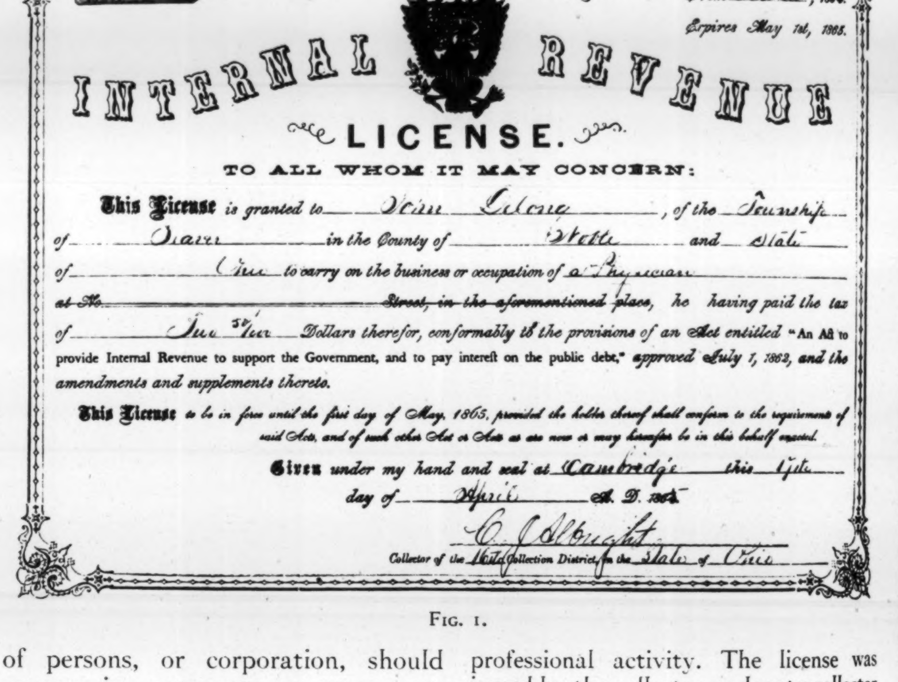
He once kept a small account book in which were recorded the financial transactions of his ministrations but this has also long since disappeared so that it is impossible to determine the extent and kind of renumeration paid for his services.

In physique, Delong was typical of his day and locality. His ability as an entertaining story teller is still commented upon by those whose lives overlapped his. His personal popularity as a neighbor is also evident.

Of his professional papers there remain only two internal revenue license certificates issued in 1865 and 1866 respectively. The earlier of these is reproduced herewith. These were, however, issued only after more than forty years of actual practical experience as a family doctor. Such licenses were issued under Section 57, Chapter 119, of the Act of July 1, 1862 which provided that "no person, association of persons, or corporation, should engage in, prosecute or carry on, either of the trades or occupations mentioned in section 64 of the Act, until he or they obtain a license therefor in the manner herein provided."*

Section 64 (32) reads as follows:

"Physicians, surgeons, and dentists shall pay ten dollars for each license. Every person (except apothecaries) whose business it is, for fee and reward, to prescribe remedies or perform surgical operations for the cure of any bodily disease or ailing [sic], shall be deemed a physician, surgeon, or dentist, as the case may be, within the meaning of this act."



[redacted]

UNITED STATES INTERNAL REVENUE LICENSE.

IN FORCE
From Feb 1st, 1865.
Expires May 1st, 1865.

TO ALL WHOM IT MAY CONCERN:

This License *is granted to* [illegible] Gilcrea, *of the* Township *of* Olive *in the County of* Noble *and* State *of* Ohio *to carry on the business or occupation of* a Physician ~~at No. Street, in the aforementioned place~~, *he having paid the tax of* Ten 50/100 *Dollars therefor, conformably to the provisions of an Act entitled* "An Act to provide Internal Revenue to support the Government, and to pay interest on the public debt," *approved July 1, 1862, and the amendments and supplements thereto.*

This License *to be in force until the first day of May, 1865, provided the holder thereof shall conform to the requirements of said Acts, and of such other Act or Acts as are now or may hereafter be in this behalf enacted.*

Given *under my hand and seal at* Cambridge *this* 17th *day of* April *A. D.* 1865

C. J. Albright

Collector of the 16th *Collection District for the* State *of* Ohio

FIG. 1.

Each physician was required to register with the assistant assessor of the assessment district in which he carried on his professional activity. The license was issued by the collector or deputy collector of the assessment district and was good for one year. Apparently the Act of July 1, 1862, was construed as requiring a physician to pay a tax and take out a so-called license in each collection district in which he practiced. An Act approved March 3, 1863 (12 Stats. 713), Section 25, relieved the situation by providing:

". . . lawyers, physicians, surgeons, or dentists, having taken out a license as such, shall not be required to take out any additional license in consequence of practicing their profession within or beyond the limits of the district where licensed."

The indexes to previous volumes of the United States Statutes At Large do not reveal any requirement that physicians secure so-called federal licenses, before 1862.

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* Quoted from personal communication by Dr. W. C. Woodward, Bureau of Legal Medicine, Amercan Medical Association.

Two things are worthy of note in this connection:

"The Act of July 1, 1862 (12 Stats. 432), by which the license tax was first imposed, did not require of the licensee-taxpayer any professional qualifications whatever. The license and tax were imposed on 'every person (except apothecaries) whose business it is, for fee and reward, to prescribe remedies or perform surgical operations for the cure of any bodily disease or ailing [sic].'"

While the receipt, or certificate, or whatever it may have been called was referred to in the Act of July 1, 1862 (12 Stats. 432), and in the Act of March 3, 1863 (12 Stats. 713), as "a license," later acts referred to the payment as "a special tax." This was probably in recognition of the fact that the Federal Government had the right to impose an occupational tax on physicians, surgeons, dentists, and others, but that it had no right to say who might and who might not engage in any such calling; that was a function of the State. That principle has been recognized more recently in the Harrison Narcotic Act; the Federal Government can impose a tax on those who use narcotic drugs professionally, but it cannot say who within any given state may and who may not use them; that is solely a function of the State.

It is regrettable that more details of the life and activities of this self-made frontier doctor have not been preserved. The modern, highly trained physician may consider him with contempt or amused tolerance. How different would have been the story of the frontier except for the ministration of this man and others like him can, of course, only be conjectured. Leaving his work in the field or woods, or his bed after a day of the hardest toil, at the call of a stricken neighbor, treating his patients where and when he found them or they him, he must have been no small factor in alleviating the hard conditions of life in those hills which retained their frontier characteristics long after the rest of the state became a civilized commonwealth.

Crude as were his methods, they were the best obtainable and after all were based on experience. What must have been the terror of the pioneer expectant mother approaching accouchement with only the aid of her family or neighbors; or of parents when a smallpox epidemic suddenly and inexplicably descended upon the community with terrible results; or of the woodsman injured by a falling tree or a carelessly handled ax? Between these and extermination stood only the hardy group of men of whom John F. Delong is typical, men, who, in similar activities today, would be classed as charlatans and quacks but who in their day were saints and martyrs.

PHYSICIAN PHYSICISTS

By EDWARD PODOLSKY, M.D.

BROOKLYN, NEW YORK

PHYSICIANS, as a class, have perhaps been among the foremost contributors to the progress of civilization in its various phases. Almost as important as their purely medical work, their activities in extra-medical spheres have added more than a mite to the enjoyment of human life. In the field of literature the names of Chekov, among the most significant of short-story writers, Rabelais, the immortal author of "Pantagruel" and "Gargantua," Schiller, the great German dramatist, Keats, among the sweetest poets of mankind, Oliver Wendell Holmes, the popular American poet, and Sir Arthur Conan Doyle, creator of Sherlock Holmes, stand out with especial brilliance. Among others, in quite different situations, might be mentioned Richard Jordan Gatling, inventor of the Gatling gun, David Livingstone, who penetrated the depths of the dark continent, Leander Starr Jameson, of the famous or infamous "Jameson Raid" into Transvaal, Leonard Wood, soldier, and Governor General of the Philippines.

In physics the contributions of the medical fraternity extend back many hundreds of years and are among the most brilliant and significant additions to this important science. It is no exaggeration to say that the science of dynamics is due to Galileo Galilei (1564–1642), who was born in Pisa. He evinced an interest in medicine long before he distinguished himself as a physicist. He entered the University of Pisa as a medical student, but his interest in mathematics and physical phenomena soon proved overwhelmingly greater. He gave up all thoughts of medicine and went to Florence to devote himself exclusively to physics with such great success that in 1589 he received the appointment for three years of the chair in mathematics in Pisa where he had begun his medical studies a few years previously. During his incumbency here he performed his memorable experiments on falling bodies, but his new views met with so much opposition that he was forced to resign in 1591. From 1592 to 1610 he occupied the chair at the University of Padua. At Padua he continued his contributions with the perfection of the telescope, microscope and air thermometer. With his telescopes he made several important astronomical observations. Distinguished by the luster of these achievements, he departed from Padua and accepted the invitation to Florence, as philosopher and mathematician to the Grand Duke of Tuscany.

A few years later his conflict with the Church began. He boldly preached the doctrines of Copernicus, and in consequence was summoned before the Inquisition at Rome. The theory of the earth's motion was roundly condemned by the gentlemen of the Inquisition, and Galileo was enjoined to silence. He wisely heeded this injunction, but only for a few years. In 1632 he published, contrary to the edict of 1616, a new work, the "Dialogo," which was a brilliant success as an argument in favor of the

Copernican theory. This, as was expected, brought about a second trial. Galileo was subjected to indignity, imprisonment and threats. On his knees he was forced publicly to "abjure, curse, and detest the error and the heresy of the movement of the earth." For a while he was kept away from his family and friends, but after he had become blind and wasted with disease a little of his liberty was restored to him.

The first years after 1632 were given to the study of dynamics. In 1638, appeared, not in Italy, but in Holland, his dialogues on motion, under the title: "Discourses on two new sciences pertaining to mechanics and local motions." These are now considered his greatest and most substantial achievements. Galileo was the first to show that the path of a projectile is a parabola. Previously it was believed by some that a cannon ball moved forward at first in a straight line and then suddenly dropped vertically to the ground.

Just as Galileo was the founder of the science of dynamics, William Gilbert was the father of magnetic philosophy. Dr. Gilbert (1540–1603) was born at Colchester, county of Essex, England, and studied medicine at St. John's College, Cambridge. He travelled a great deal on the Continent where, as well as in England he "practised as a physician with great success and applause." He was appointed by Queen Elizabeth her physician-in-ordinary, and she settled upon him an annual pension for the purpose of aiding him in the prosecution of his philosophical studies. His first investigations were in chemistry; but later, for eighteen years and more, he experimented on electricity and magnetism. In 1600 he published his great work "De Magnete," which was the first great work on physical science produced in England. Galileo pronounced it "great to a degree that is enviable," but in England it was not appreciated so highly. In subsequent generations the book was quite forgotten.

The most important contribution of Gilbert is that the earth itself is a magnet. He pointed out that the earth exerted a couple, not a force, upon a compass needle. He also introduced the field of force in a qualitative way, an *orbis virtutis*, surrounding each magnet, an idea that was much used by Faraday. The demagnetization of iron by bringing it to a red heat was clearly known to Gilbert, and it is highly probable that he inferred from this fact that magnetization is a molecular phenomenon. He said:

> When a piece of iron has been touched by a lodestone, if it be placed in a hot fire until it is perfectly red and remain in the fire some considerable time, it will lose that magnetick strength it has acquired. Even a lodestone itself through a longish stay in the fire, loses the power of attracting implanted and innate in it, any other magnetick powers.

Some three hundred years before anything was known about the recombination of ions into neutral molecules Gilbert classified bodies into "electrick" and "non-electrick" according to whether they had effect upon his versorium (electroscope) or not.

Among the early great mathematical physicists was Jerome Cardan (1501–1576). His results were purely mathematical. In mechanics he announced a law of the inclined plane as follows: The force required to hold a body at rest on a frictionless plane is proportional to the angle which the plane makes with the horizontal. This, however, was more theory than truth. A simple experiment would have shown him that this was not so, but he evidently was more interested in mathematical trickery than in experimental truth. His great work, "De subtilitate rerum," (Leyden, 1551) represents the best physical learning of his time. In this treatise will be found, among other things, his account of "Cardan's suspension," very widely used in connection with the mariner's compass. This device, however, Cardan did not claim as his own. He was a man of great learning, a graduate of Pavia and Padua, a successful physician, but unfortunately, a man of rather poor character.

All the early thermometers contained air, and the stem was arbitrarily graduated. Being affected by changes in atmospheric pressure, Galileo's air thermometer was very imperfect. The first improvement was introduced by the French physician, Jean Rey, who simply inverted Galileo's instrument, filled the bulb with water and the stem with air. This later was made the thermometric substance. On January 1, 1632, he communicated this method to the great intermediary among scientists, Pater Mersenne. But as Rey could not bring himself to close the upper end of the stem there was a constant danger of errors from evaporation of the water. Thus, the thermometer which has played so important a rôle in clinical medicine was developed and improved by physicists with a medical training.

Among the first to interest himself and investigate in animal electricity was Aloiso Galvani (1737–1798), physician and professor of anatomy in Bologna. By accident he was led to the great discovery of current electricity or "galvanism." The story goes that his wife was in poor health and was ordered to eat frogs' legs. Galvani prepared them himself. When he had removed their skins, he laid them on a table near the conductor of a charged electric machine and left the room. His wife chanced to hold a scalpel near the machine while at the same time the scalpel's point touched the exposed crural nerve of the frog's leg. A spark passed and the leg convulsed violently. She acquainted her husband with this occurrence and he repeated the experiment. This occurred on November 6, 1780. Galvani set about to discover the cause. He went through quite an elaborate series of experiments and came to the conclusion that the source of electricity was in the nerve.

To Thomas Young (1773–1829), a native of Milverton, Somersetshire, England, we are indebted for the revival of the undulatory theory of light after a century of neglect. This great scientist had an extraordinary childhood. He could read with considerable fluency at the age of two. When four years old he had read the Bible twice through; and when he was six he could repeat the whole of Goldsmith's "Deserted Village." He devoured books, classical, literary and scientific, in rapid succession. He grew up fit physically as well as mentally. At sixteen he abstained from sugar on account of his opposition to the slave trade. At nineteen he entered upon a medical education, which was pursued first in London, then in Edinburgh, Göttingen, and finally at Cambridge. In 1800 he began medical practice in London; in the following year he accepted the chair of Natural Philosophy in the

Royal Institution, the metropolitan school of science established in the preceding year by Count Rumford, of American birth. He held this position for two years. From January to May, 1802, he delivered there a series of lectures which were later published under the title, "Lectures on Natural Philosophy and the Mechanical Arts," in 1807, ten years after he had received his degree in medicine. In 1802 he had been appointed Foreign Secretary of the Royal Society which office he held for the remainder of his life.

Young's earliest researches were on the anatomical and optical properties of the eye. Then followed the first epoch of optical discovery, 1801–1804. His theory was laughed at, and he proceeded to other studies. The twelve succeeding years were given to medical practice and the study of philology, especially the decipherment of hieroglyphic writing. But when Fresnel, in France, began to experiment on light and to bring into prominence the theory of Young, then the latter resumed his early studies, and entered upon his second epoch of optical investigation. In 1801 Young read before the Royal Society, a paper on the color of thin plates, in which he expressed himself strongly in favor of the undulatory theory of light. The great step in this paper was the introduction of the principle of interference.

Everyone knows that when an extra candle is lighted in a room the illumination of the room is invariably increased, but Dr. Young devised an experiment to show that two lights may be added together so as to produce an illumination which is not more, but less than either one. The two sources of light he obtained by making two pinholes or cutting two parallel slits very close together, about 0.5 cm. apart, in an opaque screen, such as a visiting card, and then viewing through this any small and comparatively distant source of light. When such a screen is held close to the eye, the observer always sees a set of bright dark and dark parallel bands. Either pinhole alone gives a continuous bright field; but when the field is illuminated by both there are certain regions, dark bands, where the illumination produced by one pinhole is completely annulled by that from the other. Just how Young was led to this experiment is told in his own words as follows:

> It was in May, 1901, that I discovered, by reflecting on the beautiful experiments of Newton, a law which appears to me to account for a greater variety of interesting phenomena that any other optical principle that has yet been known. I shall endeavor to explain this law by a comparison.
>
> Suppose a number of equal waves of water move upon a surface of a stagnant lake, with a certain velocity, and to enter a narrow channel leading out of the lake. Suppose then another similar cause to have excited another series of waves, which arrive at the same channel, with the same velocity, and at the same time with the first. Neither series of waves will destroy the other, but their effects will be combined: if they enter the channel in such a manner that the elevations of one series coincide with those of another, they must together produce a series of greater elevations; but if the elevations of one series are so situated as to correspond with the depressions of the other they must exactly fill up these depressions and the surface of the water must remain smooth; at least, I can discover no alternative, either from theory or experiment.
>
> Now, I maintain that similar effects take place whenever two portions of light

are thus mixed; and this I call the general law of the interference of light.

The physical researches in light were further carried on by another physician, Jean Leon Foucault (1819–1868) who was born in Paris. He studied medicine, but his attractions lay elsewhere and between 1845 and 1849 he embarked upon physical research. At this period in his activities he was associated with Fizeau. But after a while they separated and each entered upon a series of experiments to determine the velocity of light. Foucault's researches on the velocity of light in air relative to that in water were carried out at his pavilion in the Rue d'Assas, and were submitted by him in 1853 as a thesis for the degree of Doctor of Science. In 1851 he presented a memoir giving his famous demonstration on the rotation of the earth by means of a pendulum. The following year he invented that marvellous piece of mechanism, the gyroscope. In 1854 Napoleon III secured a place for him at the Paris Observatory as a physicist. In spite of immense intellect, as is the case with quite a few other men of genius, Foucoult possessed a poorly developed body. Lissajous said of him: "It seems as if nature had undertaken to establish a striking contrast between Foucault's physique and his intellectual powers. Who could have divined the man of genius under this frail appearance?"

Further contributions to the study of the nature of light were made by another physician, William Hyde Wollaston (1766–1828), of London, who observed the bright spectral bands due to blue light at the base of a candle flame, which are now called the "Swan spectrum" after William Swan who described them in more detail in 1856. Wollaston had the gift of originating important lines of research, but in each case he just fell short of making a distinct step. In 1802, he saw seven lines; the first five most prominent ones were considered by him to be the natural boundaries or the dividing lines of the pure simple colors of the spectrum. His explanation is of interest, for it shows how a most plausible theory may be destitute of truth. Said Wollaston:

> The colors into which a beam of white light is separable by refraction, appear to me to be neither seven, as they usually are seen in the rainbow, nor reducible by any means (that I can find) to three, as some persons have conceived; but . . . four primary divisions of the prismatic spectrum may be seen, with a degree of distinctness that, I believe, has not been described or observed before.

The utilization of color for practical means was developed to a great degree by John William Draper (1811–1882) who was born in St. Helen's, near Liverpool, and educated at London University. He came to the United States in 1883. After studying medicine in the University of Pennsylvania, he was chosen to the chair of chemistry and physiology at Hampden-Sydney College, Virginia, and later to the same chair in the University of New York, where he remained for the rest of his life. In 1847, Draper published an important memoir in which he concluded from experiment that all solid substances and probably liquids became incandescent at the same temperature, viz., red heat at 525°c.; that below 525°c. invisible rays are emitted, and as the temperature rises above 525°c. rays of a greater refrangibility are added successively and continuously; that all spectra of incandescent solids are continuous, that gases give continuous spectra too, but may have bright lines superimposed. The last statement is incorrect. Thirteen years later Draper's correct conclusions were deduced independently from theoretical considerations by Kirchoff, who started out from the relation between emitting and absorbing powers possessed by different bodies for radiant energy.

The first scientific study of the formation of dew was made by a London physician, William Charles Wells (1757–1817), and the results published in his "Essay on Dew," 1814. It is well known that on a clear, quiet night, the grass radiates heat into free space, whence no heat returns. Being a poor conductor, the lower parts of the grass receive little heat from the earth. The grass cools and vapor condenses upon it. Good conductors like metals receive heat from the surrounding bodies and therefore are not covered with dew. A cloudy sky hinders the formation of dew by returning the radiated heat. Winds are unfavorable because they carry heat to the cooling objects. Wells supposed that only a very small part of the dew deposited comes from vapor rising from the earth or evaporation from plants.

Another great physicist who was trained as a physician was Robert Mayer (1814–1878) who was born in Heilbronn, Germany. In the gymnasium and theological school he gave no evidence of any great intellectual power which was to distinguish him in later life. In 1832 he entered upon the study of medicine at Tübingen, and in 1838 began to practice. Unfortunately, he did not find the work of a practising physician agreeable to his tastes. He travelled considerably and devoted a great deal of his time to the study of physiology. An observation made in 1840, on the blood of a patient in a tropical climate, was the origin of his scientific writings. It led him to the study of those physical forces on which the phenomenon of vitality depends. Thus, he was led from the contemplation of organic nature to the preparation of a paper, "On the Forces of Inorganic Nature," 1842. It was refused publication in Poggendorff's *Annalen*, but was accepted by Liebig for the May number of his *Annalen*. It attracted no mention although it contained the great principle that the energy of the world is constant. A second paper, 1845, could be published only at his own expense. Several other papers were published later. The following story, related by the great mechanician, Mach, shows Mayer's alertness of mind:

> During a hurried meeting with Mayer in Heidelberg once, Jolly remarked, with a rather dubious implication, that if Mayer's theory were correct, water could be warmed by shaking. Mayer went away without a word of reply. Several weeks later . . . he rushed into the latter's presence, exclaiming: "Es ist so" [It is so]. It was only after considerable explanation that Jolly found out what Mayer wanted to say.

The mind of Mayer became seriously affected by the lack of appreciation of his ideas, by controversies regarding his rights of priority, as well as the death of two of his children. On May 28, 1849, he unsuccessfully attempted suicide by jumping from a second-story window. After a seeming recovery he wrote a paper on the mechanical equivalent of heat. In 1851 he was placed in an insane asylum, but after a year he was released. He, however, never completely regained mental equilibrium. In 1858 a few voices were heard in Germany in praise of Mayer, but the one who did most to bring him historical justice was John Tyndall, who in 1862 lectured before the Royal Institution on Robert Mayer and also translated several of Mayer's papers.

Perhaps the greatest physician physicist was Hermann von Helmholtz (1821–1894). He was born at Potsdam, Germany, studied medicine in Berlin and became an assistant at the charity hospital there immediately after his graduation. Following this he became a military surgeon in the city of his birth (1843–47). In succession he was a teacher of anatomy at Berlin, of physiology at Königsberg, later at Bonn and Heidelberg (1858–1871). In 1871 he accepted the chair of physics at the University of Berlin. Throughout his life he was of the first rank as a physiologist, physicist and mathematician. His famous paper on energy, entitled "Die Erhaltung der Kraft," which as a youth of twenty-six he read before the Physical Society of Berlin in 1847, was at first looked upon as a fantastic speculation. The editor of Poggendorff's *Annalen*, who in 1843 declined Mayer's paper, rejected Helmholtz's also. However, in 1847 this paper was published in pamphlet form. For a time it attracted little notice, but in 1853 it was attacked by Clausius. Later it subjected the author to virulent attacks from Duhring and others, who accused him of being a dishonest borrower from his forerunner, Robert Mayer. In 1847 Helmholtz who had heard nothing of Mayer acknowledged that physician physicist's priority. Helmholtz's contributions to physics were of the highest order. His theory of color is well known; his work in acoustics is a classic, and the greatest text on physiological optics was written by him.

Thermo-electricity was discovered in 1821 by Thomas Johann Seebeck (1780–1831) who was born in Reval, Esthonia, Russia. At the age of seventeen he left his native country, never to return. He studied medicine at Berlin, but being well off he did not enter practice, and instead decided to devote himself to the pursuit of science. From 1802 to 1810 he lived in Jena where he was the personal friend of Schelling, Hegel, Ritter and other prominent Germans. Being elected a member of the Berlin Academy of Sciences he took up his residence in that city. Oersted's experiments induced him to enter upon a long series of electrical investigation. With a view of verifying certain speculations regarding the magnetic character of the electric current, he established an electric circuit consisting partly of copper and partly of bismuth. One metallic junction he held in his hand. He satisfied himself that the resulting deflection of the galvanometer needle arose from the difference in temperature of the metallic junction, brought about by the heat from his hand. He found similar effects by cooling one of the junctions; the effects varied for different metals, and were greater for greater differences of temperature. From these investigations arose the science of thermo-electricity, one of the great contributions to man's store of practical knowledge.

In other fields of practical physics contributions of physicians stand out as of great importance. In the winter of 1844 Dr. John Locke, Professor of

Chemistry at the Medical College of Ohio, lectured before its president and officers on magnetic clocks. Dr. Locke showed how the beats of a clock might be repeated and how another clock at a telegraphic distance might be made to move without pendulum or weights. In 1849 the government called Locke to the Naval Observatory in Washington where he constructed the first electrochronograph. Today his invention, the electric clock, is in wide use throughout the country.

Another physician's contribution to practical physics which has had a great influence on modern civilization is the fire alarm system. In the middle of the last century Dr. William F. Channing applied the principle of electric telegraphy to the fire alarm and in 1851 placed before the city of Boston a detailed plan for a telegraphic system of transmitting fire alarms. Dr. Channing worked out a complete system of fire alarm boxes, bells, receiving electrical apparatus, etc. Ten thousand dollars was finally appropriated by the city government in order to put his plan into operation. The doctor likened his telegraphic system to the human brain and nervous system, and drew a strong analogy "between the functions of the motor nerves and the apparatus of the anial system."

There is but little doubt that one can go on for many more pages detailing the contributions both to pure physics and applied science of the physician physicists. Their work in this field has been as fully important and significant as in so many others.

NOTES ON ENGLISH MEDICINE (HENRY VIII-GEORGE IV)

By J. R. CLEMENS, M.D.

WEBSTER GROVE, MO.

THE writer whilst engaged during the past year in extensive historical research amongst English historical documents came across many letters in which reference was made to much that cannot fail to interest the medical man.

One Alderman Frere was a noted chirurgeon; and being employed by King Henry 8, about the year 1537, to rip up his Queen Jane (Seymour) in order to save his son, afterwards King Edward 6, had the manors of Wolvercote, Yarnton, and Eaton given him by the King for that service.

This is denied by some.[1]

The tuberculous taint of Sir Robert Cecil, Elizabeth's diminutive hunchback prime minister, was evidently transmitted to his children for we read:

> Hugh Baylye to Sir Robert Cecil—1599 Oct.—The charge which I have taken in hand for the cure of Mistress Franccys Cecill that she should go well and perfect of herself; now thanks be to God, she is well and out of her instruments. My bargain was, when I took her in hand, to receive for the curing of her 100 pounds.[2]

Lord Cobham describes to Sir R. Cecil an orthopedic operation performed upon himself:

> March 25, 1599. On Sunday last my foot was put in joint, which being out so long and the party that set it thought skilful yet old and weak, that it was very nearly a whole hour before he could put it in the bone. Judge what pain I endured; since the splinter which is of iron to keep the bone in must not be altered for 14 days, and is so hard tied about my foot that the pain I now endure is very great, besides the cold weather which increases it. They assure me for my comfort that there is no blemish on my leg.

(A follow-up of Lord Cobham's subsequent letters shows that the operation was successful.)[3]

We meet with an early reference to bone-setting in 1561: "To a bone-setter living in Walbroke for setting in of two joynthes which weare out in younge Gerve's ancley, 3 shillings 4 pence."[4]

The Earl of Leicester takes a water-cure. On June 13, 1577 he writes from Buxton that:

> Touching his health, his brother and he like and commend the water. They observe their Physician's order diligently and find great pleasure both in drinking and bathing in the water. Thinks it would be good for Burghley, but not if he does as they hear he did last time, take great journeys abroad 10 or 12 miles a day, and use liberal diet with company dinners and suppers. They take another way, dining two or three together now Lord Pembroke is there, having but one dish or two at most, and taking the air afoot or on horseback, moderately. If Burghley comes next year as he says, let him not bring too many with him. The house is so little as a few fills it and hard then to keep sweet. In haste this foul Thursday.[5]

It is surprising to find that in Elizabeth's day physicians apparently made elaborate stool examinations as is hinted at in the following letter to Sir Robert Cecil:

> 1599, July. I lately presented you with copper, I now present with silver, but I

pray God it has catcht no copper. This tincture it received upon a stool which my Lady made yesterday in the afternoon, and my Lord of Cumberland protesteth he did make the like in his last journey to the Indies, and it was avouched that my Lady Norris did the like in her sickness lately. But Mr. Paddy is peremptory that she hath taken mercury sublimate, because it toucheth being tried with gold, which how much it is you may see in the bottom. The rest Mr. Gilbert, Foster and Nowell, seem doubtful. I thought it fit you should see it because I hear there was the like once before, which the women say now passed without note.

My Lady was much afraid of death after they had showed her the basin, and called for me to know the truth from the Doctors' mouths, which I was fain to enforce with three or four oaths before she would believe me. She was much distempered with heat.[6]

From what the Lord Admiral Howard writes to Sir Robert Cecil, and from the letter of Henry Lord Cobham to the same, we see how careful they were against carrying infection:

1595, April. I am bold to acquaint you what course I have taken upon my two boys' sickness. Mistrusting at their complaining it would turn out to be the measles, I left them in Hailing house with the schoolmaster, Mr. Stone, well seen in physic. Within three hours after I was parted from them, having some milk and sulphur given them, the measles came wonderful thick out of them both. I have none of them come to me that was with them, nor was I ever with them but in the open air, for I came late from the Court and next morning was early on horseback, [and]

May 21, 1600. I pray you be advised, my Lord Treasurer's two daughters have the smallpox. You know he doth ever wear furs. There is no one thing that doth carry infection as furs doth.

In regard to the treatment of measles: From Charlotte Sophia, Queen of England, to Lady de Clifford. A letter of suggestions for the treatment of the writer's granddaughter, "dear little Charlotte," who is ill with the measles. "I must name one thing," says her Majesty, "little regarded and yet of the utmost consequence, which is that of changing the linnen too early. Even Sir Francis, without my naming it, would not allow it to be done until the sixth day."[9]

Pridgeon's (1648) directions for treating a chancre; the prescription is bread poultices twice a day, with the prescribed wash, purge and diet drinks.

His treatments for smallpox were as follows:

If the partie should have the small-pox, which you may guesse by his heavines, burning and cough, lett him lie warme in his bed, but moderately, keeping his throate pretty coole, givinge him burnt wine with saffron till you see there will no more come forth. Take fresh butter, a quarter of a pound and melt it on th fire, as much refined sugar searved [?] through tiffeney or lawne, and beate it with a spoone till it come to be so thicke as Pomato; than take a fine feather (when it is melted) and dip it in (being luke warme) and annoynt his face and hands twenty times in a day and night, nott sufferinge the party to scratch himselfe, nor rubb them too hard against his pillow or anythinge else, nor to clippe them or the like, keepinge the places still anoynted till you see them shill off, alwayes beinge extreame carefull to keepe him in a temperate heate, but rather warme than cold, by all meanes, for if he should take cold, it would endanger his life; now if he should have them in his eyes or throate, take a little brest milke, a little saffron and a little white sugar-candy, melt them together in a caucer, and lett him swallow a little of this att a time, beinge warme, for his throate when you see them first appear; then take a feather and dip it in the same, and draw it through his eye lidds, and by the grace of God it will preserve his sight.

To take away the holes in the face:

Take the quantity of a pound of veale and putt it in some corner in a seller where it may best putrifie and breede maggotts, then take those maggots, beinge well growne, put them on a wire and rost them before the fire, havinge somethinge to preserve the drippinges of them, which you must take and anoynt the party's pitts in his face, and it will take away the whole therein. Given by an Italian.[10]

Treatment for a sore throat: This, for its quaint preciseness deserves extracting (1689):

Take y^{e} thick grit in y^{e} trough of a grinding stone, and spread it upon a leatherern stay, and so apply it warm to y^{e} throat; and when it grows dry, change it for a fresh one. A stone y^{t} grinds razors much best. Give a purging pill in y^{e} yoke of a raw egge which will slip down his throat, tho almost choak't. Mingle y^{e} white of an egg beaten with rose water and sugar candy and give it often a little at a time.[11]

The following was a receipt for weak eyes in 1676:

"My right eye, which is the dimmer eye, is much dryer then the other, but one morning it was very hard waxed, so I was put to a great deal of trouble to rub the wax off with my finger before I could open it." [The writer (John Perceval), was advised to cut his hair and then to] gather a quantity of woodlice, keep them in a glass bottle with a little earth, take seven of them alive, and wash them in clean water from the earth, then pound them and strain them into a small draft of beer which after dropping some into his eyes he was to drink fasting for his morning's draft.[12]

Under date 1692 we meet with the mention of diabetes:

Wee have a strange distemper, that of late years raigns much amongst us which was rare amongst our ancesters; but some are of opinion that it was more frequent then, but not so much taken notice of; it is a diabetes. Some languish away in it sooner than others. Some have had it upon them two or three years. I met with one that told me hee had had it two years, and thought it would end his dayes. The Lord Brooke died of it, in six weeks sickness.[13]

1719, March 28, London: Copy of "the celebrated Professors Boerhave and Osterdyke's regimen prescribed for the gout." The regimen consists of a milk diet with bread, butter, grain food, fresh vegetables and ripe fruit, a little tea or coffee with milk, no meats or stimulants, and nothing salt or sour. Bread and milk supper, plenty of sleep and exercise, and rubbing for half an hour before getting up and at going to bed. If the pain be violent, a little dose of opium is allowed, but no oftener than necessity requires.[14]

A clinical case fully described:

1686, April 29. Burton—Dr. Upton to Sir Robert Southwell—I am importuned by Mr. Lloyd to give you a particular account of Sir John Perceval's sickness, which I shall, perform as it has proceeded, ever since he was first surprised with it. Upon the 18th of this instant Sir John being, by urgent business, invited to rise early, he soon after complain'd of some disorder in his head, a sickness of stomach, a dimness of sight, and a troublesome heat. These symptoms at this time were not so great as to occasion in himself or others any suspicion of danger in them. At night since the sickness of his stomach continued, he resolved to attempt his relief by taking a Carduus posset. This night he slept but little, and found no satisfaction or refreshment in the sleep he took.

Upon the 19th he continued much as before. This day a clyster was administered, by which he found little benefit. In the night a looseness surprised him, and yet his heat continued, for to enjoy the mistaken benefit of cool air he arose as frequently as his looseness followed him, and indeed without that occasion he would get up only to cool himself. This method of hindering transpiration made him, when he returned to his bed, much hotter, and yet, then, his remedy was to arise and cool himself.

Upon the 20th instant he continued as the day before, frequently going into bed and rising out of it, uneasy at night, without satisfactory rest, which made him consent upon the 21st to lose blood, which he did out of the arm, in quantity eight ounces. His blood was very corrupt and inflamed. By this method of bleeding he found for the present an abatement of his heat, but it returned upon him again, and in this night's sleep he found as little refreshment as in the last, upon which account upon the 22nd he was again persuaded to lose more blood. To this he consented, and eight ounces more were taken out of the other arm. By this bleeding likewise he found some short refreshment, but all night his looseness follows him with great violence, his heat is augmented, and he complained to me (who upon this day first visited him) that he could not command his words. I found his water as pale, his pulse unconstant, by which I suspected some malignity in this fever. I being now desired to assist the former physician, did first oblige Sir John to keep his bed. I directed him to the use of barley decoctions with sorrel, to which we ordered syrup of lemons and citron and sorrel; besides this almond milks were prescribed for him, and some proper powders against the malignity of his disease. By this method this night he rested well, but at the noon of the second day he found his speech falter, and that he had not the command of it. All this time his discourse was inconsistent, his looseness violent, his pulse unconstant, his water pale. These symptoms prompted me to look about his body for the appearance of malignant spots, and indeed the success answered my expectation, for I found many malignant spots of a livid aspect in almost every part of his body. Upon this account I desired more help, and accordingly another physician from Cork was brought upon the 24th. All which time the malignity seemed great, his pulse oppressed, by which his natural heat was almost lost. We, upon this account, endeavoured by all means to oppose the malignity, which otherwise being too great, had presently destroyed him. But our first Alexipharmics answered not our expectation, neither did they alter his heat or pulse. But upon the 25th, 26th, and 27th he continued oppressed by malignity, without pulse or natural heat. We still continued our endeavour to oppose it by blisters, magisterial powders, etc., so that upon the 28th we found the malignity somewhat abated; the pulse being more free this day, we applied to his feet pigeons; after the application of them, he seemed lethargic, upon which account we removed our blister, plasters, etc.

This day—viz., the 29th—he now appears by his last night's blisters to be well awaked, but is now upon the other extreme—too vigilant. He is delirious, and has frequent convulsive motions, with a very low pulse. His spots, which appeared so early, are this day filled, and look like those in the small-pox. I have very dreadful apprehensions that the event will be fatal, which I beseech God to avert.

We have this day applied pigeons to his feet a second time, but we do not find that he is so disposed to sleep after them as yesterday. If his strength will admit it, we intend to make use of cupping glasses, but first we resolve to apply more gentle means.[15]

A certificate of health: In 1626 Mr. Nicholas Harris, who had been accused of being a leper went to London to be examined at the College of Physicians, to secure a certificate of health which was required by the Almshouse of Totnes, before he could gain permission of entering into it. A copy of the certificate given to him thereupon by the college of physicians, follows:

"Wee, whose names are underwritten, upon this petition have reviewed the body of this Petitioner, and in our censures he is free from y^e imputed disease. Tho. Woundeser (sic) Pres. Coll. Med. London, John Argent, Nich. Andrewes, Sy.Baskervile, Censors, Matth. Gwynn, Regestarius."

We see in the following letter that doctors' efforts were not always appreciated:

> Charleville, July 3rd, n.y.—My Lady Broghill to the Earl of Dorset . . . My Lord of Ossery has lately lost a sister, my Lady Baremore (Barrymore). My Lady Kildare also died on Saturday last by some fisik she took off Doctor Currar, itt was soe voyelent that she lived 1 hower after she took itt. Thanks be to God, my uncle had a fare scape off the docter.[16]

Nor did old Sarah Jennings, Duchess of Marlborough, have much of an opinion of doctors.

> I can't but think, [she writes in reference to Dr. Mead one of the brightest and most learned physicians of his time] that there is reason to hope she will do well, if Dr. Mead does not kill her, for I know by woeful experience that hee is the most obstanate and ignorant doctor that wee have had a great while, though he is much followed at present. Dr. Sloane is there and Sir S. Garth was expected. One doctor I think is better than a great many if you can relye upon him, and as the practice is amongst them you have really but the advice of one when you call in twenty, for they all submit to that doctor that is most cry'd up, either for a quiet life, or for fear of not being sent for to his patients.[17]

Queen Anne and her physicians:—Grave charges were made against the physicians who had attended her before her succession to the throne. The imputation upon them is they wilfully and treacherously subjected her to a wrong course of treatment in order that she might not be delivered of a living heir and thus give additional strength to the claims of the Pretender.

To account for the mortality of Queen Anne's children rumor had it that there was an assassination plot afoot, and that Dr. Radcliffe, Queen Anne's accoucheur, was the head of it. A document dated February 3, 1702, has as heading, "Some few Queries about the Preparatives of making way for a Prince of Wales in the year 1687, etc."

> Q. (1) Whether the two children of the Princess Anne, Lady Mary and Lady Ann, died of any disease, or else were destroyed by physic, and who were the authors of it, as also of Her Highness miscarrying at the same time, all to make way for the pretended Prince of Wales, when the doctors tried practices upon the Princess and Dr. S[carburgh] disputed the case with Dr. R[adcliffe] at that time, and told him he deserved to be whipped about the pig-market for what he had done to the Princess, and Dr. S. at the same time took pains by the help of Mr. Boyl, and the Countess of Clarendon, and the Lady Ranelagh, Dowager, to have brought such help to the Princess as had not failed, and would have been communicated to, the Princess's doctors?
>
> Q. (2) At the same time, Sir Thomas Powys [the King's Attorney-General at that time], his Lady was put in the same course of physic as the Princess was, but her Ladyship held it not above eight

days, and was like to have lost her own life and her child's too, yet her Ladyship did accept of the help that was offered to be communicated to the Princess's doctors, and was by that means carried through her full time of a son, which is yet alive, and the Princess had a son born two months before the time, which, as was supposed, lay dead a full month within her?

(3) Whether the same persons have not been the opposers of the Princess having help, though the late gracious Queen made it her desire to the Princess to accept of such help, which her Highness could run no hazard in, since her doctors might have been judges of the case, and her own apothecary might make up the medicines, and within a few days or weeks after this desire of the Queen, there was a breach made between the two great sisters, and for what is fit to be queried, it was in the year 1690, and the Princess has had eight or nine dead children since that time?

(4) Whether it be not proper to be queried who have been the persons that have opposed the same help since the Queen's death, five or six of the children having been born dead since 1695?

(5) Whether the promoters of the Assassination Plot, and the advancers of the pretended Prince of Wales's interest, are not all of a piece? If that be true, the next query may be:

(6) Who were the persons that promoted, or at least winked at both the assassination, invasion, and insurrection, which, with humble submission, is no hard matter to make appear.

(7) Whether all these evil designs upon the Princess has not been a preparative to usher in the pretended Prince of Wales, after the death of King James, on purpose to cut off the Princess from her right to the Crown, and to set up Popery and arbitrary government in these nations.?[18]

This Dr. John Radcliffe was the most famous (and a beloved) physicain of his day: 1714, November 5.

You have heard of poor Radcliffe's death; it was a great mercy that God gave him the opportunity and heart to make so noble a will as he has done. 120,000 l. in charity is what can scarce be paralleled in any age from a private man, and all gotten by himself by the fairest practice that ever any of the profession used, and himself living nobly too, all his life. Above 60,000 l. is immediately to be laid out in charity, the rest is at present in annuities to relations, and to be laid out in charity by his executors, as the annuities expire. It is no small honour to Mr. Slaughter to be named as one of the executors of such noble benefactions. I suppose you know the executors are Mr. Bromley, Sir George Beaumont, Mr. Slaughter, and Beck the scrivener. 40,000 l. for our public library. Amongst other uses John Hudson's place is to be augmented out of it to 200 l. per annum, and a certain sum every year for ever for buying in what books are wanting. Two travelling physicians, to be as I think of University College, with 300 l. per annum to each of them for ten years, to be five years abroad and five at home. They are to be chosen by the Archbishop of Canterbury, Bishops of London and Winchester, the Lord Chancellor, two Secretaries of State, and two Chief Justices, and the Master of the Rolls, 5,000 l. as I hear for the augmentation of the headship of University and rebuilding the Master's lodgings. 600 l. per annum to St. Bartholomew's Hospital.

Other references to Radcliffe of interest are many but the following two must suffice:

I do not wonder that Dr. Mead has altered his prescriptions. I should have wondered if he had been so lucky in them at a distance as to have found no reason to change them. Radcliffe was surely in the right, that a man might as well draw a face as prescribe for one he did not see.

I hope the little one will have no gripes that are dangerous. I would only hint that our friend Radcliffe was for giving young babes as little as possible. He frankly owned he knew not what to do with them, and was for leaving Nature, if it were possible, to do its own work.

Proceedings of the select committee on the charge against the Duke of Buckingham of having caused the death of James I by poison and the doctors' (Betwin, Lister, Moore, Atkins, Hayes, Paddy) evidence show that the King in his last illness was seized by convulsions accompanied by high fever and the medical treatment had been the application of plaster on leather to the stomach and possets to drink. The physicians said, the plaster was a secret of a man of Essex and that the posset smelt of hartshorn.[20]

In the days of Charles II every man was apparently his own dentist, for in a letter dated August 23, we learn that:

> The swelling of my Lord's face is now quite gone, he drew out the tooth which was the cause of it. The King (this week) being troubled with the same distemper drew a tooth which caused the gums to bleed so violently that the surgeons were going to sear it with irons; but then it stopped as they were going to do it.[21]

In a letter dated December 29, 1730, we read:

> Today an extraordinary operation is to be performed by Chisledon, the famous surgeon; he thinks he has discovered that the hearing is not wholly communicated by the ear, and that a person born deaf, or who has totally lost the hearing by accident, if the drum of the ear be entirely cut out, he will hear by the nose and mouth. Seventeen of the condemned criminals of the last session had their lives offered 'em, provided they would submit to this trial, but they all refused the condition except two, who are this day to undergo it.[22]
>
> They say 'tis the most painful operation in nature, and that the surgeon insists on their being chained while he performs it; but 'tis well worth trying upon wretches worthy of death, if 'tis attended with a great good to society.[22]

A letter from Dr. Richard Warren (one of the doctors employed for George III, when mentally deranged) to Lady Spencer, dated 1788, Nov. 12.: *Rex noster insanit; nulla adsunt febris signa; nulla mortis venturae indicia.* This is the whole of the letter, which is dated from Windsor.[23]

The following extracts from letters tell their own story.

1666, April 6–24:

> I can tell you little of the stroaker (Valentine Greatrakes) that is worth the writing. Some say they are the better for his stroaking; others are the worse. The King is far from having a good opinion of his person or cures. Printed books talked things of him that I have not taken the pains as yet to read . . . Sir John Denham is now stark mad, which is occasioned (as is said by some) by the rough striking of Greatrakes upon his limbs; for they say that formerly having taken the fluxing pills in Holland, and they not working, they rubbed his shins with mercury: but that neither causing him to spit they supposed it lodged in the nerves till the harsh strokes caused it to sublimate . . . so Sir Denham did not die, but is fallen violently mad, and is likely to continue: He is now at one Dr. Lentall's house at the Charter House. The doctor is one that pretends to cure those in this condition, and to him Dr. Fraisier and the rest sent him: What that means you can safely imagine.[24]

The post mortem of Charles II, 1684:

The late King's body was opened on Saturday last, and such a quantity of extravasated blood found all over that it could not be possible for him to live longer; the motions of it were so violent in at the vessels of the head that several of them were burst, so as to mingle with the serous matter and break in upon the substance of the brain and overspread the meninges and plexus choroides. The lungs were so replete with blood that they could hardly be discerned from the liver; the kidneys were overflown also. All the noble parts were perfect and sound, and had there been a large evacuation of blood made a week before all that which fatally followed would have been prevented. It was a legacy that Sir Alexander Fraser his late physician, who knew the temperament of his body the best of any man, left his Majesty when he was a-dying, that as he tendered his life he would let blood twice every year at least, and if he omitted or neglected the doing of it that it would prove fatal to him. Now, his late Majesty not having let blood the three last years of his life, and feeding high and using little or no exercise the last year, made such a plethory and fulness of spirits that the vessels could not contain them, and when they were exalted to that degree, like the shooting of a gun or as "Wills" particular explosive, they made their last effort in that great fit, and would have certainly made a total wreck of the fabric had not Dr. King's seasonable letting him blood checked the motion and gained some time of the distemper before it could return again. The body was carried last night to the Painted Chamber, whence, after 5 or 6 days more, it will be removed to Henry VII's Chapel, and there privately interred, and all the white staves broke upon it.[25]

28 May 1703. A letter giving particulars of the result of the post-mortem examination of the body of Samuel Pepys, the famous Diarist:

There was found in his left kidney a nest of no less than 7 stones, of ye most irregular figures your imagination can frame, and weighing together 4½ ounces; but all fast linked together and adhering to his back, whereby they solve his having felt no greater pains upon motion, nor other of the ordinary symptoms of ye stone; the rest of that kidney was nothing but a bag full of ulcerous matter, which irritating his bowles caused an irresistible flux, and that his destruction.

Dated from Clapham.[26] A post-mortem of Dr. Samuel Johnson:

Dissection by Heberden and Cruickshanks—vesicles of wind were found in the lungs which Heberden said he had never seen before and Cruickshanks professed to have seen only two instances—one of the kidneys quite gone, a gall stone in the bladder I think—no water in the chest and little in the abdomen no more than that might have found its way there after death.

It is interesting to note by the evidence of the following extract that the Elizabethans had a definite number of days for quarantine of measles: 1594. March 9.

Sir W. Cornwallis to Sir Robert Cecil: Let not my absence from Court and your continual being there make me a stranger to your favour and love. I know not what limit of time be appointed to them who have had the measles in their house but for my part I never came near the house by 4 miles since and these 3 weeks now it is since the children have been plucking flowers in the garden; yet if they should judge mine ears be horns, instead of flowers I might gather thorns. Therefore for fear of pricking my fingers I am determined to tarry longer.[28]

1794. Feb. 20, London. Malone To Charlemont:

Gibbon [the historian] was uncommonly agreeable but his indolence and inattention and ignorance about his own state, are scarce credible. He had for five-and-twenty years a hydrocele and the swelling at length was so large that he straddled in his walk; yet he never sought for any advice or mentioned it to his most intimate friend lord Sheffield; and two or three days before he died very gravely asked lord Spencer and him whether they had perceived his malady. The answer could only be, "Had we eyes?" He thought, he said, when he was at Althorp last, people looked at him a little oddly. The fact is that poor Gibbon, strange as it may seem, imagined himself rather well-looking and his first motion in a mixt company was to the fireplace, against which he planted his back, and then taking out his snuff box began to hold forth.[30]

Malone to Charlemont.—Sir Joshua Reynolds.

1792. March 13. London:—When Reynold's body was opened, his liver which ought to have weighed five pounds weighed eleven. Day after day during his illness his physicians declared they could form no judgment what was the matter with him yet did not ask for a consultation. At length, about ten days before he died, Heberden and others were consulted and they then at last pronounced his liver affected. It was then, indeed so large and hard that any one might have known that to be the case. Such wonders have been done in the East Indies in the disorder by mercury that I cannot but lament it was not earlier discovered. On the dissection it appeared that the optic nerve of the lost eye was quite shrunk and flimzy but the other, which he had such constant apprehension of losing was unimpaired.[31]

1615. Sept. 28. Whitehall.

Physicians' report. They went at eight in the morning to the Tower to view the body of the late Lady Arabella Stuart. The cause of her death was a chronic and long sickness; the species of disease was "illam jamdiu producem in cachexiam," which increasing as well by her negligence as by refusal of remedies (for a year she would not allow doctors to feel her pulse or inspect her urine), by long lying in bed she got bed-sores and a confirmed unhealthiness of liver and extreme leanness and so died. The report was signed by Tho. Moundeford (President of the College), Guil. Paddy, Ed. Lister, Ric. Palmer, Jo. Argent; Matt. Gwynn.[32]

Richard Andrews to the Countess of Newcastle. 1663, May 10. London.

I understand that your Ladyship is with child and that therefore you desire to be furnished with such help in physics as shall be fit, and such as you have had before. I have therefore sent down to you first a powder to hasten the birth and make it more easy. It is made of cassia, saffron and borax. When you are in travail I would have you take of the powder as much as will lie upon a groat in a spoonful of burnt white wine or bezoar water or spirit of saffron. If you should be long in labour and grow faint there is an excellent cinnamon water to take a small spoonful of to refresh your spirits. But there is a water in a little glass, called Adrian Gilbert's water, which is commended above all others in childbirth. There are other comfortable waters and spirits sent down in a little "seller" of which you may make use of now and then. There is also a glass of Confectio Alchermes to take a little of when you are fainting and in the evening you may take the quantity of a dry bean, either alone or mingled with cordial water and four or five grains of bezoar stone. I have sent you also an Eagle Stone which in time of labour being tied about the thigh will make the labour easier.[33]

In a letter dated 1598 Apr. 14 we meet with the quack, who, as in our day, professes to treat the "private" diseases of women: "Surquoy le dit prisonnier respondoit, 'j'ay aulcunesfois guerri secretes maladies de femmes, pourquoy ne me fieroit votre Seigneurie'!"[34]

1533. Item to a WOMAN physician at Bingeham in the Vale, iijs iiijd.

1547. Symon Lowe to William Andros. "Reppes married Elizabeth Holland of Mendham who died in childbed, the Caesarian operation being performed. Reppes says the child was born alive and claims tenancy by the curtesy in her lands."[35]

The sources of authority for statements made in this paper are to be found in the Royal Commission on Historical manuscripts publications printed by His Majesty's Stationery Office, Adastral House, Kingsway. W. C. 2, London, England. Each article is documented by a footnote, numbered.

REFERENCES

1. Second Report. 1874. Mss. Lincoln College, Oxford, p. 132.
2. Calendar of Mss. Marquis of Salisbury, 1902, Part IX, p. 383.
3. Calendar of Mss. Marquis of Salisbury, 1904, Part X, p. 79.
4. Thirteenth Report. Appendix. 1893, Part VI. Mss. Sir W. Fitzherbert, Bart. p. 258.
5. Calendar of Mss. Marquis of Salisbury, 1888, Part II, p. 154.
6. Calendar of Mss. Marquis of Salisbury, 1902, Part IX, p. 256.
7. Calendar of Mss. Marquis of Salisbury, 1894, Part V, p. 194.
8. Calendar of Mss. Marquis of Salisbury, 1904, Part X, p. 153.
9. Ninth Report. Appendix and Index. 1884, Part II. Mss. Alfred Morrison Esq., p. 437.
10. Report of Mss. of the Earl of Ancaster, 1907, p. 417.
11. First Report, 1874, Mss. King's College, Cambridge, p. 68*b*.
12. Mss. of the Earl of Egmont. 1909, 2: 53.
13. Fifth Report. Report and Appendix. 1876, Part I. Mss. J. R. Pinscoffin Esq., p. 384.
14. Report of Mss. in Various Collections. 1909. Mss. Sir John James Graham of Fintry, p. 219.
15. Mss. of the Earl of Egmont. 1909, 2: 183.
16. Seventh Report. Report and Appendix. 1877, Part I. Mss. Lord Sackville, p. 289.
17. Ninth Report. Appendix and Index, 1884, Part II. Mss. Alfred Morrison Esq., p. 473.
18. Eighth Report. Appendix. 1881, Part II. Mss. Duke of Manchester, p. 87*b*.
19. Mss. Duke of Portland. 1901, 7: 206–293–334–385–403.
20. Mss. Earl of Lonsdale. 1893, pp. 2–18. Thirteenth Report. Appendix, Part VII.
21. Seventh Report. Report and Appendix. 1879, Part I. Mss. Sir A. Verney, Bart. p. 468.
22. Fifteenth Report. Appendix. 1897, Part VI. Mss. Earl of Carlisle. p. 78.
23. Second Report, 1874, Mss. Duke of Bedford at Wobarn Abbey, p. 14.
24. Sixth Report. Report and Appendix. 1877, Part I. Mss. Sir. R. Graham, Bart., p. 339.
25. Mss. Earl of Egmont. 1909, 2: 139–150.
26. Ninth Report. Appendix and Index. Part II. Mss. Alfred Morrison Esq., p. 453.
27. W. Windham. Life of Samuel Johnson.
28. Calendar of Mss. Marquis of Salisbury, 1894, Part V, p. 136.
29. Mss. of the Family of Gawdy, 1885, p. 2.
30. Thirteenth Report, Appendix. 1894, Part VIII. Mss. Earl of Charlemont. 2: 230.
31. Thirteenth Report. Appendix. 1894, Part VIII. Mss. Earl of Charlemont. 2: 188.
32. Eighth Report. Report and Appendix. 1881–1907. Mss. College of Physicians, p. 228*b*.
33. Thirteenth Report. Appendix. Part II. Mss. Duke of Portland, p. 123.
34. Calendar. Mss. Marquis of Salisbury, 1899, Part VIII, p. 132.
35. Mss. Duke of Rutland, Vol. 4: 274.
36. Mss. The Family of Gawdy, p. 2.

HINDU MEDICINE AND ITS ANTIQUITY

By P. J. SARMA, M.D., M.S., F.A.C.S.

CHICAGO, ILL.

LACK of knowledge of the Sanskrit language and difficulty in tracing the origin of Aryan culture to the Greeks, have caused the history of Hindu medicine to be neglected by modern historians.

It is generally admitted that the early philosophy of the Greeks was derived from the East, and it seems quite natural that medicine in a state of considerable advancement was taken from the same source.

A group of historians and antiquarians has concluded that India was the birthplace of medicine and surgery. The most learned and trustworthy, authority, Schulze,[1] in his history of medicine strongly took this stand. Dr. Wise,[2] in his commentary on the Hindu system of medicine published in 1845, also in his review of the history of medicine published in 1867, came to the same conclusion. In 1837, Dr. Royle[3] of King's College, London, combined all available information with many original researches of his own, in his celebrated essay, "The Antiquity of Hindu Medicine," and concluded that the Hindus were the originators of medical science.

The Greeks themselves did not claim the honor of originating the healing art. Nearchus[4] says, "The Grecian physicians found no remedy for snake bite, but the Hindus cured those who happened to incur this misfortune." Arrian[4] says that the Hindu physicians, by wonderful and even more than human means, cured whatever would admit of cure. Royle has shown that Dioscorides, who lived in the first century A.D. and was the author of the materia medica of the ancients, had taken much of his materia medica from the ancient Hindus. Galen and Pliny, also, borrowed much from the same source.

In 1823 Professor H. H. Wilson[5] published a brief article on Hindu medicine, proving that the physician Ctesias, who lived in the fifth century B.C., and Theophrastus, who lived in the third century B.C., wrote accounts of India which contain notices of the natural products of the country and of her scientific advancements. In 1835 Soma de Koros[6] gave a sketch of Hindu medicine as translated into the Tibetan language. Heyne[7] and Ainslie[8] also collected much interesting information on Hindu medical science. Royle gives evidence that Hippocrates, the father of medicine, borrowed much of his materia medica from the Hindus.

In the fourth century B.C., Alexander the Great had many Hindu physicians in his camp for the treatment of diseases which Greek physicians could not heal.

Arabian records show that in 773 A.D. Haroun al Rashid of Bagdad[9] retained two Hindus, known as Manaka and Saleah, as his personal physicians.

Jolly[10] has shown that the foundations of early Hindu medicine were laid long before the dawn of the Christian Era, that Sanskrit writing in medical works is genuine and old, and is not inferior in antiquity to any other branch of Hindu learning.

After an impartial and lifelong study of the history of medicine, Dr. Wise says, "It is to the Hindus that we owe the first system of medicine."

Medical science in Sanskrit is called "Ayurveda," or the science of life. The early Hindus believed Ayurveda to be of divine origin. Brahma, the first member of the Hindu triad, was the propounder of the healing art. He is said to have composed the original Ayurveda in a hundred thousand verses, divided into a thousand chapters. This has been composed as a subdivision of Atharva veda.[11] Of the earliest system of Hindu medicine, which was cultivated from B.C. 1400 to 1200 to the philosophical age, B.C. 800 to 400, when all Hindu learning was raised to a science, very little has been left for investigation. The ancient Ayurveda was divided into eight divisions:

1. Salya Tantra or major surgery,
2. Salakya Tantra or minor surgery,
3. Kaya Cikitsa or medicine,
4. Bhuta vidya or science, deals with the restoration of deranged faculty of the mind,
5. Kumara bhritya or pediatrics,
6. Agada Tantra or toxicology,
7. Rasayana or chemistry,
8. Bajikarana discusses the means of promoting the increase of the human race.

Although considerable progress was made in medical science in the course of time, yet loyalty to the past was noticed among the Hindu writers, who alluded reverently to the earlier science as the gift of gods. Among the later and more scientific works, those of Charaka and Susruta are the best known, and are the most ancient and complete in existence.

The date of Charaka and Susruta has not been definitely established; however, from evidence gathered, it has been claimed that Charaka preceded Susruta. Hessler[12] maintained that Charaka lived somewhere between 800 and 600 B.C., while Cordier[13] felt that the origin of Charaka was during the days of Buddha, in 500 B.C.

Hoërnle[14] translated manuscripts found by Colonel Bowers in a ruined monastery in Kuchan, India. He thought these manuscripts represented the works of Susruta and dated from 500 A.D. As it has been proved that Charaka preceded Susruta, it was claimed by Hoërnle that Charaka lived before 500 A.D.

Dildar Khan, an Afghan merchant, obtained a package of torn Talipot leaves with Sanskrit writing, which he divided and sent to Weber,[15] MacCartney[16] and Oldenburg.[17] Hoërnle was convinced that MacCartney's was the same known as Charaka Sanhita and was in existence as early as 320 A.D. Max Müller was of the same opinion as Hornle.

In 1896, Sylvian Levi,[18] translating some early Chinese legends, brought out that Charaka was the physician of the early Hindu king, Kaniska, who founded the Kanishka pura. The early explorer, Hiouen T. Sang, in 600 A.D., wrote of the conquests of Kaniska and puts him about 100 B.C. Ferguson and Oldenburg place Kaniska about 78 A.D. After a thorough study of all available data, Jelliffe[19] came to the conclusion that the date of Charaka, who wrote the Sanhita, is somewhere between 100 B.C. and 78 A.D.

Wise concluded that Charaka and Susruta must have been prepared in a very early age, probably from the third to the ninth or tenth century before the Christian Era. His most important reason was the ancient form of construction of the Sanskrit languages of these books.

Charaka's fame travelled into Arabia. Avicenna[20] quotes him as Scirak, and Rhazes who was prior to Avicenna, calls him Scarak. One of the earliest of the Arabian authors, Serapion, mentions Charaka by name as Zarch. In the eighth century A.D.

Charaka was translated and was well known in Arabia.

The Charaka Sanhita[21,22] is arranged in the form of dialogues between the master and his pupil. The work is divided into eight books:

1. Sutra Sthana explains the origin of medicine, the duty of the physician, the use of medicine, the cure of disease, materia medica, diet, baths, etc.

2. Nidana Sthana deals with fevers, tumors, diabetes, leprosy, consumption, mania, epilepsy and discharges of blood.

3. Bimana Sthana treats of epidemics, study of proper food and diet. Symptoms and methods of diagnosis of disease and use of drugs are considered. One chapter discusses the peculiarities of the fluids of the body.

4. Sarira Sthana treats of the nature of the soul and its relation to the body. Anatomy is also taken up in this section.

5. Indriya Sthana describes the organs of sense and their diseases, the color of the body, defects of speech, diseases of the body and of organs, loss of strength, and death.

6. Chikitsa Sthana treats fully of all diseases. Many instructions are given for the improvement of health and the enjoyment of long life.

7. Kalpa Sthana treats of emetics and purgatives. Antidotes are considered in this part.

8. In Siddhi Sthana external methods of treatment are described; irrigations and injections for the urethra, vagina and rectum; evacuating medicines, irrigation for abscesses. It also discusses clysters, etc.

Susruta Sanhita [23, 24, 25] is probably a later work than the Charaka. Precisely when the author may have lived it is impossible to tell. An interesting story is told about the life of Susruta and his work. Indra, the chief of the gods in heaven, imparted the knowledge of healing to Dhanvantari, the medical practitioner of the gods. Dhanvantari taught it to eight learned rishis among whom Susruta, the son of Vishamitra, a contemporary of Rama, was chosen to record the instructions correctly. Charaka is superior to Susruta in the accuracy of his descriptions, in the classification of diseases, and in the plan of medical treatment; while Susruta very accurately describes anatomy of the human body with judicious application of the art and science of surgery. Susruta divides his Sanhita or book into six parts:

1. Sutra Sthana, in which is considered the origin of medicine; the rules for teaching, the duty of physicians, the selection and use of instruments and medicines, the influence of the weather on health, preoperative and postoperative care; description and methods of diagnosis of surgical diseases; the restoration of defective ears and noses; and the removal of extraneous substances which have entered the body; the different stages of inflammation, with their treatment; different forms of wounds and ulcers, and the regime of patients suffering from surgical diseases. The proper preparation of diet and nursing is considered in this part. The prognosis of disease is also discussed in this chapter.

2. Nidana Sthana describes the symptoms and diagnosis of disease; the symptoms of abnormal presentation in obstetrical cases are considered; diagnosis and cause of hemorrhoids, urinary stones, fistula in ano, ascites, hydrocele, diseases of the organs of generation and of the mouth are considered.

3. Sarira Sthana describes anatomy and physiology.

4. Chikitsa Sthana describes the treatment of surgical diseases, as inflammatory ulcers, fractures, hemorrhoids, fistula in ano, bladder stones and other surgical conditions. Obstetrics and pediatrics are included in this part.

5. Kalpa Sthana, or toxicology, describes antidotes.

6. Uttara Sthana treats of local diseases. The diseases of the eye, ear, nose and throat and head are included in this chapter. All the medical diseases are considered in this supplemental section.

Many valuable books on medicine and surgery by Bhagbhata,[27,28] Madhavakara,[29] Chakradatta,[30,31] Srangadhara,[32,33] Bangasena,[34] and other physicians followed the works of Charaka and Susruta. It is found that Charaka and Susruta were the groundwork of all the medical and surgical systems that followed.

In summarizing the medical knowledge of the ancient Hindus we find that good educational foundation was required of a student of medicine. Susruta says:

> Any one knowing only a single science, cannot have true knowledge of that science, hence a physician should be well versed in many other sciences beside the science of medicine. [Again we find the same author telling his pupils that], when any subject which belongs to other sciences is referred to in this treatise, the students should know its meaning from the exposition by men learned in those sciences, for it is impossible in treating any science to avoid references to other sciences.

Anatomy and physiology are very elaborately treated by Charaka, Susruta, and Bhagbhata (second century B.C.). Susruta describes the composition of the human body more thoroughly than any other author. The thorough description of 300 bones and 210 joints looks curious to the modern anatomist, yet it astounds one to see the carefulness of the study of the most minute structures of the body and also the methods of classification.[35]

Charaka instructed physicians to know all the parts of the body, both external and internal, and their relation to each other.

Susruta advised that every student of medicine should dissect, in order that he might know the different parts of the human body; a surgeon and physician should not only know the external appearances, but internal structures of the body, in order to possess an intimate knowledge of the disease to which it is liable, and to perform surgical operations so as to avoid the vital parts.

The functions of various organs and structures, as observed after studying living persons, are recorded in these books. The knowledge of menstruation, gestation, etc., seems quite modern.

In Nidana Sthana, Charaka, Susruta and Madhavakara studied symptoms of disease very carefully. The knowledge of pathology is quite deficient, and the methods of diagnosis depended solely upon the study of symptoms, careful examination of the patient, and examination of the excreta. Here Kanada[35] and Sankarasen[36] added a new method of diagnosis by examining the pulse of the patient. They describe methods of palpation of the radial artery and interpretation of various movements in relation to disease.

A word about the knowledge of medical hygiene among the ancient writers will not be out of place. Charaka and Susruta advised patients as to the proper foods to be eaten, the clothes to be worn, and the hour of sleep and rest. "Cleanliness is next to godliness" is preached by all the authors, and patients are advised as to proper bathing and brushing of teeth with a branch of the Indian fig tree. This custom still prevails in that country.

The vegetable resources of India are practically unlimited, and naturally Hindu physicians were acquainted with a large variety of vegetable medicines.[37,38,39] The materia medica of the Hindus is a marvel to the modern investigator. Charaka and Susruta have described drugs belonging to the animal, vegetable and mineral kingdom. Vegetable drugs and medicinal plants were classified as:

Tuberous and bulbous roots
Bark of roots
Bark of large trees
Trees possessing a peculiar smell
Leaves
Flowers
Fruits
Seeds
Acrid and astringent vegetables
Milky plants, and
Gums and resins.

The writers show great knowledge of botanical geography by describing the site and climate where the plants grow; also the proper weight and measure of drugs, directions for expressing juice from fresh vegetables, making powders of well dried plants, and preparing infusions and decoctions of various kinds.

Chemistry was well known to the early Hindu physicians. The seventh division of Ayurveda is devoted to a thorough study of Rasyana or chemistry. Roy,[40] in his History of Indian Chemistry, has shown the earliest contributions of India in this field. Charaka and Susruta describe many chemicals and metals for use as therapeutic agents. Susruta devotes a chapter on preparation of acids and alkalies. He also describes many valuable uses of caustics in the treatment of ulcers and wounds. Charaka describes the Hindu way of making muriatic acid. Metallic medicines were used more and more after Charaka's and Susruta's time, and we find Chakrapani and Nagarjuna[41] describing the therapeutic use of mercury, zinc, sulphur and many other metals in the eleventh century A.D. Susruta describes the chemical processes of making solutions, evaporation, calcification, sublimation and distillation.

Dr. Wise has concluded that the Arabs derived their knowledge of chemistry from the Hindus.

Susruta shows considerable knowledge of obstetrics. The management of normal delivery and the treatment of abnormal conditions are treated intelligently. He describes the use of forceps for the delivery of the child, also cesarean section to remove the living child from the dead mother. Excellent prenatal and postnatal care was practiced.[42]

A section is devoted by both authors to the treatment of children's diseases. Natural and artificial feeding for the child is considered, and infant hygiene has its proper place.

The study of mental psychology, with psychotherapy, played an important part in the method of treatment used by the early Hindus.

Next to medicine we find that the Hindus had remarkable knowledge in surgery. Susruta was essentially a surgeon, and a large portion of his book is devoted to the practice of this science. He calls surgery "the first and best of the medical sciences, less liable than any other to the fallacy of conjecture and inferential practice, pure in itself, the worthy product of heaven."

Mukhopadhya,[43,44] in his study of the surgical instruments of the Hindus, has shown that no less than 127 surgical instruments are described by Susruta.

Surgical operations were divided into many branches:

Chedana, incision, cutting
Bhedana, excision or division
Lekhana, scarification and inoculation
Vyâdhana, puncturing
Eshyam, probing and sounding
Aharya, extraction of solid bodies
Visravana, extraction of fluids, and
Sevana, sewing.

All these operations were performed by the Yantras or blunt instruments, and Sastras, or sharp instruments. Under Yantras, or the blunt instruments, are forceps, syringes, specula, probes, cupping appliances, spoons, actual cautery, splints, etc. Knives, scissors, needles and sharp probes are described under the Sastras, or sharp instruments. Susruta tells us that cutting instruments should be of bright, handsome, polished metal, and sharp enough to divide a hair longitudinally. The young practitioner is advised to acquire proficiency in the use of such instruments by making incisions, not only on vegetable substances, but also on the fresh hides of animals and the vessels of dead animals.

In addition to the use of blunt and sharp instruments in surgical operations, threads, leaves, bandages, leeches, pledgets, heated metallic plates for erubescents, caustics and alkaline solutions, and a variety of astringents or emollient applications were also used. Barks of trees were used for splints in fractures.

The description of the ritual of a surgical operation is extremely interesting. The surgeon prays before operating. Susruta instructs the surgeon to keep his hair and beard short and the nails close cut and clean also, to wear clean dress. The operating room should be clean and fumigated with disinfecting vapors before and after all operations.

The technique described for lithotomy, cesarean section, rhinoplasty, skin grafting, cataract-couching, amputations, setting of fractures, reduction of hernia, extraction of foreign bodies, drainage of pus, etc., amazes any student of modern surgery.

In a medical treatise (Bhojaparabandha) written in or about 980 A.D., Ballala pundit refers to an inhalation anesthetic called Sammohini. This anesthetic is supposed to have been used in the time of Buddha.[45]

In this brief outline of the history of Hindu medicine I have touched only the important points. It is impossible to cover in so short a space of time India's brilliant contribution to the field of medicine, as well as in other arts and sciences.

I hope I have enkindled a feeling of interest among the students of medical history for further study and research in this neglected field.

REFERENCES

1. Quoted by Francis Adams. The Genuine Works of Hippocrates. N. Y., Wood, 1886, vol. 1.
2. WISE, T. A. (a) The Commentary on the Hindu System of Medicine. Calcutta, Thacker and Co., 1845. (b) Review of the History of Medicine. London, J. Churchill, 1867, vol. 1.
3. ROYLE, J. F. An Essay on the Antiquity of Hindu Medicine. London, Cassel, 1837.
4. ARRIAN, N. Indian History. Ed. by Mr. Brooke. London, 1729, vol. 2.
5. WILSON, H. H. On the medical and surgical sciences of the Hindus. *Oriental Mag.*, Calcutta, March, 1823.

6. Soma de Koros, A. *J. Asiatic Soc.*, Calcutta, No. 37, Jan., 1835.
7. Heyne, D. Tract on India. London, Luzack & Co., 1814.
8. Ainslie, W. Materia Medica, India. Madras, 1813, vol. 2.
9. Remarks by Wilson, H. H. Indian Physicians at the Court of Bagdad, by Rev. W. Cureton. *J. R. Asiatic Soc.*, 6: 105, 1839.
10. Jolly, J. Early medical literature of India. Trans. 9, *Cong. of Orient.*, London, vol. 1, 454–461, 1903.
11. Whitney, W. D. Atharva Veda Sanhita. Cambridge, Harvard Univ. Press, 1905.
12. Hessler, F. (a) Allgemeine übersicht der Heilkunde der altern. *Inder. Sitzungsberg Matn.-phys. Cl.*, 1: 137–149, 1887. (b) Lehrbuch d. Geschichte d. Med. 1875.
13. Cordier, P. Origine evolution. et décadence de la Méd. *Indienne. Ann. d'hyg.*, pp. 77–89, 1901.
14. Hoërnle, A. F. R. Bower Manuscript with English translation. Calcutta, *Bengal Asiatic Soc.* (Publisher), 1895.
15. Hoërnle, A. F. R. *J. Asiatic Soc. of Calcutta*, 70: Pt. 1, 1901.
16. Hoërnle, A. F. R. Central Asiatic manuscripts. *J. Asiatic Soc. of Bengal*, 66: 247, 1897.
17. Oldenburg, H. *J. Imperial Russian Arch. Soc.*, 8: 13–17, 1880.
18. Levi, S. Notes Sur les Indo-Sycthes. *J. Asiatique*, 3: 444, 1896.
19. Jelliffe, S. E. Charaka and his time. The Proceedings of the Charaka Club. N. Y., Wood, 1906, vol. 2.
20. Quoted by Dutt, R. C. A History of Civilization in Ancient India. Calcutta, Thacker Spink and Co., 1890, 3: 382–396.
21. Sarma, S. C. Charaka Sanhita Sanskrit and Bengali Ed., Calcutta, 1908.
22. Kabiratna, A. C. Charaka-Sanhita. 4 vols., English trans., Calcutta, 1899.
23. Bhisagratna, K. L. Sushruta Sanhita. 3 vols., English translation, Calcutta, 1907–1916.
24. Sen, C. K. Sushruta Sanhita (Sanskrit Ed.), Calcutta, 1902.
25. Hessler, F. Der Ayurveda des Susruta. F. Enke Erlangae. 1, 1844; 2, 1850.
26. Sen, K. Harita Sanhita (Sanskrit and Bengali Ed.), Calcutta, 1894.
27. Sen, C. K. Bagvhata's Ashtanga-Hridaya (Sanskrit Ed.), Calcutta, 1910.
28. Warier, T. U. Bagvhata's Ashtanga-Samgraha, with Commentary by Indu (Sankrit Ed.), 3 vols., Calcutta, 1921.
29. Sen, C. K. Madhavakara's Nidana (Sanskrit and Bengali Ed.), Calcutta, 1905.
30. Mukhopadhya, G. N. Chakrapani Dutta, Calcutta, 1921.
31. Sen, C. K. Chakradatta (Sanskrit and Bengali Ed.), Calcutta, 1906.
32. Sen, N. Srangadhara (Sanskrit and English Ed., incomplete), Calcutta, 1905.
33. Sen, C. K. Srangadhara (Sanskrit and Bengali Ed.), Calcutta, 1903.
34. Banga Sena. Bhabaprakas (Sanskrit and Bengali Ed.), Benimadhab Dey and Sons, Calcutta, 1899.
35. Höernle, A. F. R. Studies in the Medicine of Ancient India. Vol. 1, Osteology, London, 1907.
36. Sen, C. K. Nari Bigyanya by Kanada and Nariganya by Sankarsen (Sankrit and Bengali Ed.), Calcutta, 1902.
37. Basu, B. D., and Kritikar, K. R. Indian Medicinal Plants (2 vols.). Calcutta, Calcutta Univ. Press, 1918.
38. Gupta, B. C. Banusadi-darpana, 2 vols. (Sanskrit, Bengali and English), Calcutta, 1908. (Volume 1, pp. 1–65, contains a full discussion in Bengali on the account of the Hindu medical authors.
39. Sen, C. K. Drabya Guna (Sanskrit, English and Bengali), Calcutta, 1904.
40. Roy, P. C. History of Hindu Chemistry, 2 vols., Calcutta Univ. Press, Calcutta, 1902 and 1909.
41. Roy, P. C. (a) Antiquity of Hindu chemistry; (b) Pursuit of chemistry in ancient India. *Modern Rev.*, Calcutta, February, 1918.
42. Mukhopadhya, G. N. Midwifery in ancient India. *J. of Ayurveda*, 5: No. 12, June, 1929.
43. Mukhopadhya, G. N. Surgical Instruments of the Hindus, 2 vols., Calcutta, Calcutta Univ. Press, 1909.
44. Mukhopadhya, G. N. History of Hindu Medicine, 2 vols., Calcutta, Calcutta Univ. Press (four volumes more are in preparation). (Volume 2, pp. 81–98, contains a complete bibliography.)
45. Quoted by Johnston-Saint, P. An outline of the history of medicine in India. *India Med. Rec.*, 49: No. 10, October, 1929.

A DESCRIPTIVE LIST OF THE INCUNABULA IN THE LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

(*Continued**)

88. Bartholomaeus de Glanvilla, Anglicus, Ordin. Minor. [1200–1250 A.D.] [De proprietatibus rerum.] [F. 1a:] §Incipiu[n]t tituli lib[r]o- | ru[m] capitulo[rum] venerabil[is] bar | tholomei anglici de p[r]op[r]ieta | tibus re[rum]. [F. 11a:] Incipit p[ro]hemiu[m] de p[r]op[r]ietatib[us] re[rum] fratris | Bartholomei anglici de o[r]dine frat[rum] mino[rum.] | [F. 456b:] Explicit tractatus de p[r]op[r]ietatibus re[rum] edi[us] |. *** §Impressus per me Joha[n]nem koelhoff de Iubeck Colonie ciuem. Anno natiuitatis | domini. MCCCCLXXXI. |

[483] ff 4°. Coloniae, Johannes Koelhoff de Lubeck, 1481.
[Hain-Copinger no. 2501.]

89. Bartholomaeus de Glanvilla, Anglicus, Ordin. Minor. [1200–1250 A.D.] [De proprietatibus rerum.] [F. 1a:] Incipiu[n]t tituli | lib[r]o[rum] et capitulo[r]u[m] venerabilis | Bartholomei anglici de p[r]op[r]i | etatibus reru[m]. [Ad finem:] *** Imp[r]essus per industrio- | sum viru[m] Anthoniu[m] koburger inclite Nuren- | berge ciue[m]. Anno salutis gratie. M.CCCCLXXXIIJ. | iij. kal[enda]s. Iunij. |

[266] ff F°. Norimbergae, Antonius Koburger s. Koberger Norimbergensis, 1483.
[Hain no. 2505.]

90. Bartholomaeus de Glanvilla, Anglicus, Ordin. Minor. [1200–1250 A.D.] [De proprietatibus rerum.] [F. 1a. tit.:] Liber de p[r]op[r]ietati | bus rerum Bartholo mei anglici. | [Ad finem:] *** Imp[r]essus Argentine | Anno d[omi]ni. M.CCCC.LXXXV. Finitus in die san | cti Ualentini. |

[300] ff F°. Argentorati, n. pub., 1485.
[Hain no. 2506.]

91. Bartholomaeus de Glanvilla, Anglicus, Ordin. Minor. [1200–1250 A.D.] [De proprietatibus rerum.] [F. 1a. tit.:] P[r]oprietates Rerum do = | mini bartholomei anglici- | [Ad finem:] Explicit liber de p[ro]p[r]ietatibus rerum | editus a fratre Bartholomeo anglico o[r] | dinis fratrum mino[r]um. Anno domini | MCCCCLXXXVIIJ. kale[n]das vero Iunij. xij. |

[326] ff F°. [Argentorati, Johannes Pryss], 1488.
[Hain no. 2507.]

92. Bartholomaeus de Glanvilla, Anglicus, Ordin. Minor. [1200–1250 A.D.] [De proprietatibus rerum.] [F. 2a (c. sign. aa i):] Hier beghinnen de titelen. *** [F. 2a–9a. registr. F. 10a (c. sign. a i i):] Wunt dye eyghent | scappen der dinghen *** [F. 452b (c. sign. EEvi):] Hier eyndet dat boeck welck ghe- | hieten is bartholomaeus van den pro- | prieteyten der dinghen in den iaer ons | heren M.CCCC. en LXXXV. opte[n] heyli | ghen kersauent. Ende is gheprint en | de oeck mede voleyndt te haerlem in | hollant ter eren godes ende om lerin | ghe der menschen van mi Meester JA | COP BELLAERT ghebore[n] van ze = | rixzee.

[452] ff 4°. Harlemi, Jacob Bellaert, 1485.
[Hain no. 2522.]

*93. Bartholomaeus de Pisis. [circa –1400.] [Epitoma medicinae.] [ff 1–4 desider.] [F. 5a. sig. a. 1:] §EPITHOMA MEDICINE BARTHO | LOMEI PHISICI DE PISIS. | [Ad finem:] FINIS. |

[104] ff 4°. [Florentiae, Laurentius de Morgianis, circa 1490.]
[Hain no. 2531.]

94. Barzizius, Christophorus. [circa 1350–1400 A.D.] [Introductorium ad opus practicum medicinae cum commentariis in IX Almansoriis.] [F. 1a. tit.:] Cristofori Barzizij | Medici singularis introducto[r]iu[m] P[r]actica eiusdem. | *** [F. 256b:] DEO GRATIAS AMEN. | *** Imp[r]essit PAPIE i[m]p[r]esso[r]ie artis p[er]itissim[is] Ma- | gister Antonius de Carchano. Anno salutifere nati | uitatis. MCCCCLXXXXIIIj°. die. xx. Augusti Ad laude[m] | die [et] eius pie genitricis | Finis. |

[258] ff F°. Papiae, Antonius de Carchano, Mediolanensis, 1494.
[Hain no. 2666.]
This edition extremely rare. One of the three copies mentioned by Pellechet.

95. Basilius, (S.) Magnus. [circa –369.] [De liberalibus studiis.] [F. 29a (c. sign. g):] SANCTI: BASILII: DE: LIBERALIBVS: STVDIIS: ET INGE | NVIS: MORIBVS: LIBER PER LEON. AR EX GRE. IN LA | TINVM CONVERSVS. |

[In- Censorinus. De die natali. *** 1497, ff 20–33.]

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*Continued from the March, 1931, issue, p. 228.

96. Basilius, (S.) Magnus. [circa –369.] [De invidia.] [F. 34a:] BASILII DE INVIDIA. | BASILII ORATIO DE INVIDIA E GRAECO IN LATI | NVM CONVERSA PER NICOLAVM PEROTVM | INCIPIT.

[In- Censorinus. De die natali. *** 1497. ff 34–46.]

97. Bate, Henricus. Magistralis compositio strolabij.

[In- ABEN EZRA. Liber de nativitatibus. *** 1485. ff 21–30.]

98. Baverius de Baveriis, Johannes Medic. [circa –1480 a.d.] Consilia Medicinalia. [Praeced. 2 ff. tabula F. 1a (c. sign. a i):] § Preclarissimi artiu[m] et medicine doctoris | ac(sic) etate sua *** feliciter incipiu[n]t. | [F. C. LIXb:] Bononie Impressa castigatissime co[n]silia pre- | clarissimi artium et medicine doctoris Magi- | siri (sic) Bauerii de Baueriis filiorum sumpti | b[us] opera uero Platonis de Benedictis i[m]pres | soris accuratissimi Die quinto Nouembris. | m.cccc.-lxxxix. | § Finis. |

[2], 159 ff. F°. Bononiae, Plato de Benedictus, Bononiensis, 1489.
[Hain-Copinger no. 2712.]
[*F. i. missing.*]

Bayrlandt
  See—Ortolff von Bayrlandt
Bellovacensis
  See—Vincentius Bellovacensis
Benedictus, A.
  See—Alexander Benedictus Paeantius
Benedictus de Nursia
  See—Nursia, Benedictus de

99. Bergomensis, Jacobus Philippus. [1434–1520 a.d.] [Supplementum chronicarum.] [F. 1a. vacat.] [F. 1b:] | Ad Magistratu[m] Bergomensiu[m]: in omnimoda historia nouissime congesta: Chro | nicarum supplementum appellata: Prologus. *** Perfectu[m] a[u]t p[er] me opus fuit a[n]no salutis n[ost]re. i483. 3°. k[a]l[end]as Iu | lij i[n] ciuitate Bergomi: mihi v[er]o a natiuitate quadragesimo nono. | Impressum autem hoc opus i[n] inclita Uenetia[rum] ciuitate: per Bernardinu[m] de Benalijs ber | gome[n]sem eode-[m] anno. die. 23°. Augusti. |

[116], [180] ff F°. Venetiis, Bernardinus de Benaliis, Bergomensis, 1483.
[Hain no. 2805.]
Imperfect. Table, 10 ff unnumbered, missing. First edition.

100. Bergomensis, Jacobus Philippus. [1434–1520 a.d.] [Supplementum chronicarum.] [F. 1a. tit.:] Supplementum Chronicharum. | [F. 1b. icon. xyl. creationem mundi exhib. F. 2a (c. sign. a^2 et ornamento xyl. circumd.):] Opus preclarum Supplementum chro- | nicharum vulgo appelatum. [F. 256b.] FINIS. | *** § Impressum autem Venetiis per magistrum Bernardinu[m] ricium de Nouaria: anno a natiuita | te d[omi]ni. m.cccc.lxxxxij. die decimo quinto Februarij. regnante inclyto duce Augustino barbadico. | § Registrum. [Insign. typogr. c. litt.] B. R. [Acced. 12 ff c. sign. A et B.] Orlandini gleroli Brixiani disticum | Tabula. | *** § Ad magistratu[m] bergomensem in omnimmoda historia nouissime co[n]gesta chronicharu[m] suppleme[n]tu[m] appellata prolog[us]. |

[256] ff wood-cut. il. F°. Venetiis, Bernardinus Rigus de Novaria, 1492.
[Hain no. 2809.]

*101. Beroaldus, Philippus. [1453–1505 a.d.] [Annotationes in Commentarios Servii in Virgilium.] [F. 1a:] Ad magnificum virum Franciscum Lasatum | *** Philippi Beroaldi Bonomensis epistola. | [F. 33a.:] Laus deo. [F. 33b. post endecasyllabon ad libellum:] Impressum Bononie per me Henricum de | Colonia su[m]ma diligentia [et] cura. Anno do- | mini. mccccLxxxij die xij me[n]sis Noue[m]b[r]is. |

[33] ff 4°. Bononiae, Henricus de Colonia, 1482.
[Hain no. 2944.]
[Bound with Plinius, C. S. Epistolarum. *** 1483.]

*102. Beroaldus, Philippus. [1453–1505 a.d.] [Annotationes centum.] [F. 2a:] ECCE TIBI LECTOR HUMANISSIME: | Philippi Beroaldi Annotationes Centum. | Eiusdem Contra Seruium grammaticum notationes. | Eiusdem Plinianae aliquot castigationes. | Angeli Politiani Miscellaneorum Centuria prima. | Domitii Calderini Obseruationes quaepiam. | Politiani item Panepistemon. | Eiusdem praelectio in Aristotelem: Cui | Titulus Lamia. | Philippi rursus Beroaldi Appendix aliarum annotationum. | Ioannis Baptistae pii Annotamenta. | Quae simul accuratissime impressa; te cum quaeso habe; perlege. et Vale. | [F. 111b. in fine:] Hieronymo Donato praetore sapientissimo; Bernardinus | Misinta papiensis castigatissime impressit Brixiae. | saturnalibus m.cccc.xcvi. Su[m]ptibus. | Angeli Britannici. |

[111] ff F°. Brixiae, Angelus Britannicus de Pallazolo, 1496.
[Hain no. 2946.

*103. Beroaldus, Philippus. [1453–1505 a.d.] [Opusculum eruditum.] [F. 1a tit.:]

Philippi Beroaldi Opusculum | eruditum: Quo continentur | Declamatio Philosophi Me- | dici Oratoris De excelle[n]tia di- | sceptantiu[m]. Et libellus de opti- | mo statu; et principe. | [F. 3a (c. sign. A):] PHILIPPI BEROALDI DECLAMATIO | AN ORATOR SIT PHILOSOPHO ET | MEDICO ANTEPONENDVS. | [F. 38b:] Impressum Bononiae p[er] B[e]n[e]dictu[m] Hectoris bon-[oniensis]. an[no d[omi]ni. MIIID. Eid. Dembr. Io. Bentiuolo foeli- | citer regnante. |

[38] ff 4°. Bononiae, Benedictus Hectoris, Bononiensis, 1497.
[Hain no. 2963.]

*104. Beroaldus, Philippus. [1453–1505 A.D.] Declamatio Ebriosi, Scortatoris Aleatoris de vitiositate disceptantium. [F. 1a tit.:] Declamatio Lepidissima Ebriosi Scortatoris | Aleatoris de uitiositate Disceptantium: | Condita a Philippo Beroaldo. | [F. 20a:] Impressum Bononiae a Benedicto Hectoris Dili- | genter et emendate Anno Salutis Milesi | mo undequingentesimo. Illus. Io. | Ben. Reipu. Bononiensis | habenas feliciter | modera[n]- | te. | REGESTVM Huius operis. a. iiii. b. iiii. c. ii. | [Insign. typ.] B.

[20] ff 4°. Bononiae, Benedictus Hectoris, Bononiensis, 1499.
[Hain no. 2965.]

*105. Beroaldus, Philippus. [1453–1505 A.D.] [De felicitate opusculum.] [F. 1. tit:] Philippi Beroaldi de fe | licitate opusculum. | [F. 2a:] AD ILLUSTREM MARCHIONEM | JACOBUM BADENSEM PHI | LIPPI BEROALDI BONO | NIENSIS EPISTOLA. | [F. 4 vacat. F. 5. (c. sign. a. i) in rubem:] ORATIO PHILIPPI BEROALDI BO | NONIENSIS DE FELICITATE HABI | TA IN ENARRATIONE GE | ORGICON VIRGILII et | COLUMELLAE. [F. 35a.:] O P VSculu[m] hoc de felicitate luculentu-[m] i[m]presso | ria Plat | onis de Benedictis Bononiae incude egre | giis his caracteribus excussum Anno salutis Mil- | lesimo quadringentesimo nonagesimo quinto | Calendis aprilibus lector amplectere et foue si fe | lix esse cupis. | REGISTRUM. | Primo folio continentur Epistola Deinde | a.b.c.d.omnes sunt quaterniones. | [Insign. typ.] PLA.

[35] ff 4°. Bononiae, Plato de Benedictus, Bononiensis, 1495.
[Hain-Copinger no. 2969.]

*106. Blanchellus Faventinus, Menghus. [1440–1520 A.D.] Quaestiones de primo et ultimo instanti. [F. 1a (c. sign. a):] Tituli questionu[m] [et] diffi- | cultatu[m] de primo [et] ultimo | instanti. Excelle[n]tissimo ar |- tiu[m] [et] medici[n]e doctoris ma | gistri Menghi fauentini. | [F. 1b:] Incipit tractatus de primo [et] vlti[m]o insta[n]ti excellentissimi artiu[m] et medicine doctoris | magistri Menghi Blanchelli Faue[n]tini ad fratrem carolum fauentinu[m] Ordinis ser- | uorum. | [F. 42a. (c. sign. e^6.) col. 2. in fine:] Expliciu-[n]t questiones vtilissime Menghi | fauentini. dilligentissime ab eo emendate. | Impresse Ferrarie p[er] magistrum Laurentiu[m] | de rubeis de valentia. [et] Andrea[m] de grassis de castronouo socios. die septimo septe-[m]bris Anno | d[omi]ni i 492. | [Registr.]

[32] ff F°. Ferrariae, Laurentius de Rubeis, (Rossi) de Valentia, et Andreas de Castro Novo, 1492.
[Hain no. 3232.]
[Bound with—Apollinaris Cremonensis. Expositio in primum posteriorum Aristotelis. *** 1493.]

*107. Boethius, Annius Manlius Torquatus Severinus. [circa 480–524 A.D.] Opera. [F. 1a tit.:] Hec sunt opera Boetii: que in hoc volumine continentur. | In porphyrii Isagogen a Victorino translatam editio prima. | In Porphyrii Isagogen a Boetio ipso translatam editio secunda. | In cathegorias Aristotelis editio vna. | In librum Aristotelis: de interpretatione editio prima. | [F. 250a in fine:] Diui Seuerini Boetij de consolatione: | necnon de scolaru[m] disciplina mellifluis operi | bus: cum sancti Thome super vtroque co[m]men- | tarijs: in hoc code[m] volumine. | Impressis venetijs per Joann[m] de Forli- | uio et Gregorium fratres. Anno salutis. M | CCCC. LXXXXJ. die. xxvj. mensis Martij. |

2 v. in 1. [352] ff. il. F°. Venetiis, Johannes et Gregoriusde Gregoriis, de Forlivio, 1491–1492.
[Hain *no. 3351.]

*108. Bossus, Matthaeus. [circa 1450–1502 A.D.] De veris et salutaribus animi gaudiis dialogus. [F. 1a vacat. F. 2a (c. sign. aii):] (A) Ngelus Politianus Laurentio Me | dici Patrono Suo. S. *** [F. 87a:] MATTHAEI | BOSSI VERONENSIS | CANONICI REGULARIS | VERA | ET | SALUTARIA ANIMI | GAUDIA | FINIUNT | [Eod. f. b. Timothei Veronensis ep. ad Matthaeum Bossum, quae expl. f. 88a. F. 88b:] IMPRESSIT | FLORENTIAE. | SER Franciscus Bonaccur | sius. Anno Salutis | M.CCCC. [LXXXXI | Sexto Idus | FEBRVARII.|

[89] ff 4°. Florentiae, Franciscus Bonacursiis, Florentinus, 1491.
[Hain no. 3672.]

*109. Bossus, Matthaeus. [circa 1450–1502 A.D.] De instituendo sapientia animo libri VIII. [F. 1a tit:] DE INSTUTVENDO SAPI | ENTIA ANIMO. [F. 2a.:] MATTHAEVS BOSSVS VERONEN- | SIS CANONICVS REGVLARIS SVO | IN DOMINO PATRI ET CONCANO | NICO MERITO PERCOLENDO SE | VERINO CALCHO SALVTEM. [Haec ep. data Veronae ex Coenobio sancti Leonardi 13 Cal. Octobr. 1495 expl. f. 4a. F. 4b.] MATTHAEI BOSSI VERONEN | SIS CONONICI REGVLARIS DE | INSTITVENDO SAPIENTIA | ANIMO DISPVTATIO | NES PER DIES. VIII. | IN PRATIS. D. LE | ONARDI IVX | TA VERO | NAM RELIGIOSISSIME HA | BITAS LECTOR A- | GNOSCITO PIE | QUE GVSTA | TO QVI | BVS | O | VERE | SAPIENS | PER CHRI | STVM EVADITO. [F. 5a (c. sign. A.i.):] ARGVMENTVM. | (p) Rimus incipit liber; inquo describitur a- | moenissimus disputationis locus; [etc. F. 12a:] DE INSTITVENDO SAPI- | ENTIA ANIMO OCTO | VA ET VLTIMA | COLLATIO | FINI | T. [Eod. f. b. notitia typographia vel correctoris. F. 127 a; M. Antonii Aldegathi Mantuani ad lectorem | Epigramma. F. 127b registrum et insign. typogr. c. litt. PLA. F. 128a;] Opus hoc Impressum e[t] q[uem] accuratissima | charactere a Pla | tone de Be | nedictis | Bo | noniae | Ano Salu- | tis Milesimo | quadrin- | gentesimo, nonagesimoquinto | Octauo Idus Nouembres, Laus Dec. [4. r. ch. c. s. 25 (24) l.]

128 ff. 4°. Bononiae, Plato de Benedictus, Bononiensis, 1495.
[Hain no. 3677.]
[*ff. 127–128 missing supplied in MSS.*]

Brant, Sebastianus
See—Gruenpeck, Josephus, Med. et Astrolog.

Braunschweig, Hieronymus
See—Brunschwig, Hieronymus

110. Brunschwig, Hieronymus. [–1533 A.D.] [Buch von der Pest.] [F. 1a. tit:] Liber pestilentialis de venenis epidimie. | Das büch der vergift der | pestile[n]tz das da gena[n]t ist der gemein sterbent | der Trüsen Blatren. von Jeronimo b[r]u[n]swig. | [F. 40a:] * Und | das getruckt vnd volendt durch mei= | ster Hansen grüninger vff mitwoch | nach vnser lieben frowen hymelfart in | dem iar als man zalt. 1. 500. iar. |

[40] ff il. F°. Argentorati, Johannes Reynardi alias Grüninger, 1500.
[Hain no. 4020.]

111. Brunschwig, Hieronymus. [–1533 A.D.] [Distillirkunst.] [F. 1a. tit.:] Liber de arte distillandi. de Simplicibus. | Das Buch der rechten kunst | zu distilieren die eintzige[n] ding | *** [Ad finem:] *** ge | truckt durch den wol geachte[m] Johannem | grüeninger zü straszburg in dem achte[n] tag | des meyen. Als man zalt von der geburt [Christi fünfftzehenhundert. Lob sy got. |

[230] ff il. F°. Argentorati, Johannes Reynardi alias Grüninger, 1500.
[Hain no. 4021.]

Brutus, Marcus
See—Diogenes Cynicus

Bubikir, Zacharias
See—Rhasis s. Abubecher, Mohammed, Fil. Zachariae Al Rasis. Medic.

112. Buch der Natur. [F. 1a:] Das Register |. [F. 3a vacat. F. 3b incon Xyl. F. 41 rubro:] § Hye nach volget das püch der natur | das Innhal | tet. *** meijster Cunrat | von Megenberg von lateyn | in teutsch transferieret und geschriben hat. | *** [In fine:] § Hie endet sich da das büch der natur. Das hat | getruckt v[o]n volpracht hanna Bänler zü Aug | spurg. An mo[n]ntagn vor aller heyligen tag An | no [et] c. in dem lxxv jar. Deo gracias. | [f. g̃. ch. s. f. c. et pp. n. 28 l. 292 ff.c. figg. xyl.]

No. sign.
[293] ff 4°. Augustae Vindelicorum, Johannes. Baemler, Augustensis, 1475.
[Hain no. 4041.]
[*27 ff. supplied in fac-sim. all plates supplied in fac-sim.*]

Bulchasis
See—Albucasis

*113. Burlaeus s. Burley, Gualterus. [circa 1275–1343 A.D.] [De vita et moribus philosophorum et poetarum.] [F. 1–10. tab. rerum. F. 11a vacat. F. 11b–12b tab. philosophorum et poetar. F. 13a rubro.:] § Incipit Pulcher tractat[us] coll[e]c[t]us. p[er] venerabilem | doctore[m] Walteru[m] burley Anglicu[m] De vita ph[ilosoph]o[rum]. | [F. 98b rubro.:] Et sic finitur perpulcher tractatus c[on]ti= | nens vita[m] mores; ac elega[n]tissima phy= | losopho[rum] d[o]c[trin]a simul et gesta Per me | Arnoldu[m] ter horne[n] Anno d[omi]ni 1472. [Insign. typogr. rubro.]

[98] ff 4°. [Coloniae], Arnoldus Therhoernen, 1472.
[Hain no. 4122.]

*114. Burlaeus s. Burley, Gualterus. [circa 1275–1343 A.D.] [De vita et moribus philosophorum et poetarum.] [F. 1a. tit.:]

Uita omniu[m] philoso | pho[r]um [et] poetarum cum aucto[r]itatibus [et] sente[n]tijs | aureis eo[r]undem annexis. | *** [F. 2a:] Libellus de vita et mo- [ribus philosopho[r]um et poetarum incipit. | [D]E vita et mo[r]ibus philosopho[r]u[m] *** [F. 86b. l. 27:] §Incipit tabula opusculi p[re]sentis alphabetica ph[ilosoph]o | rum nomina efficatio[r]es q[uem] eo[r]um sententias succin= | cte complectens. Jncipit feliitcer. (sic) | [F. 95a:] §Laus deo. |

[96] ff 4°. Parisiis, Georgius Mittelhus, 1496.
[Copinger no. 1389.]

*115. BURLAEUS S. BURLEY, GUALTERUS. [circa 1275–1357 A.D.] [Expositio sive Scriptum super artem veterem Porphyrii et Aristotelis.] [F. 1a:] Pr[a]eclarissimi uiri gualterij burlei anglici | sacre pagine professoris excelle[n]tissimi sup[er] | artem ueterem porphyrij et aristotelis ex | positio siue scriptu[m] feliciter incipit. | [F. 119a. l. 30:] Gualterij a[n]glici s[upe]r u[t]ili[tati]b[us] p[re]dicam[en]tis. sex p[ri]n | cipijs et perhyrme[n]ijs Ari. op[us] eme[n]datu[m] p[er] r[e]ue | re[n]du[m] fratre[m] Symone[m] alexa[n]drinu[m] ordi[ni]s p[re] | dicato[rum] bachallarium i[m]pressu[m] venetiis p[er] | mag[ist]r[u]m chr.[ist]oforu[m] arnoldu[m] felicit[er] explicit. |

[118] ff F°. Venetiis, Christophorus Arnoldus Venetus, [circa 1477].
[Hain no. 4127.]
First edition.

116. BURLAEUS S. BURLEY, GUALTERUS. [circa 1275–1357 A.D.] [Expositio sive Scriptum super artem veterem Porphyrii et Aristotelis.] [F. 1a. tit.:] Burlei super artem veterem | Po[r]phirii et Aristotelis. | [F. 81b:] §Explicit scriptum preclarissimi viri Gualte | rii Burlei Anglici sacre pagine professoris exi | mii. in artem veterem Porphyrii [et] Aristote- | lis: Uenetiis Impressum per Ottinu[m] Papi | ensem. Anno salutis. M.CCCCXCVII. V. Idus | Maii. Regnante inclyto principe Augustino | Barbadico. | ***

[82] ff F°. Venetiis, Otinus de Luna, Papiensis, 1497.
[Hain no. 4133.]
Imperfect. ff 67–72 and f 82 blank missing.

117. BURLAEUS S. BURLEY, GUALTERUS. [circa 1275–1357 A.D.] [Expositio super octo libros physicorum.] [F. 1a tit.:] Burleus super octo | libros physico | [F. 232b. in fine:] §Et i[n] h[oc] fin[itur] expositio excelle[n]tissimi ph[ilosophi] Gaulterij de burley anglici i[n] libros octo [de] physico auditu. Aristo. stragerite. eme[n] | data dilige[n]tgissime. Impressa arte et diligentia Boneti locatelli bergome[n] sis. su[m] ptib[us] v[er]o et expensis Nobilis viri Octauiani | scoti modoetiensis. Et humato Jesu eiusque genitrici virgini | Marie sint gratie infinite | Venetijs Anno salutis nonagesimop[ri]mo supra millesimum | et quadringe[n] tesimu[m]. quarto nonas dece[m]bris | [F. 233:] Tabula. [F. 234a:] Registrum [insig. typ. c. litt:] O S M. |

[234 ff.] 4°. Venetiis, Octavianus Scotus, Modoetiensis, per Bonetum Locatellum, Presbyter Bergomensis, 1491.
[Hain no. 4135.]

BURLEY, WALTER
See—BURLAEUS, GUALTERUS
CABALLUS, FRANCISCUS
See—CERMISONUS, ANTONIUS
CAMPEGIUS
See—CHAMPERIUS, SYMPHORIANUS

*118. CANDIDUS, PETRUS. [circa 1399–1477 A.D.] [De hominis genitura.] [F. 1a. tit:] Candidus de genitura hominis. | F. 11b. l. 9:] imp[r]essum Auguste per Johannem froschauer. | dum legeris ignoscas extere nationi [et] errata castiga- | tio. Finis. |

[11] ff 4°. Augustae Vindelicorum, Johann. Froschauer, Augustens., [1493].
[Hain no. 4320.]

*119. CANONICUS ANGLUS, JOHANNES. [circa 1250–1320 A.D.] [Quaestiones in VIII libb. Physicorum Aristotelis.] [F. 1a:] Joannis Canonici docto[r]is clarissimi o[r]di. | mino[rum] sup[er] octo lib[r]os physico[rum] q[uaesti]o[n]es i[n]cipiu[n]t. | [F. 103a:]Q[uaesti]onibus subtilissimis clarissimi docto[r]is Jo- | annis canonici ex o[r]di[n]e mino[rum] o[mn]i cura [et] dilige[n] | tia venera[n]di fr[atr]is Fra[n]cisci de benzonib[us] de cre | ma bacchalarij sacre theologie i[n] [con] uentu Uene | tia[rum] p[er] i[n]genio adhibita fine[m] i[m]posuit Octauian[us] | Scotus de Modoetia. M.CCCCLXXXI. |

[107] ff F°. Venetiis, Octavianus Scotus, Modoetiensis, 1481.
[Hain no. 4345.]

*120. CANTER FRISIUS, JOHANNES, [circa 1450–1500 A.D.] [Prognosticatio.] [F. 1a.] Ad serenissimum ac p[er] tissimum Romanoru[m] Imperatore[m]; semp[er] | augustum diuum. Federicum tertium; dominum suum colendissi- | mu[m] Joannis Ca[n]ter Frisij: pronosticon: Anni. M.CCCC.LXXXVIIJ. [F. 4a:] Venetiis impressum Idibus Januariis. M.CCCC.LXXXVIII. |

[4] ff. 4°. Venetiis, 1488.
[Not in Hain.]

*121. Capellutus Chrysopolitanus, Rolandus. [–circa 1480 A.D.] [De curatione pestiferorum apostematum.] [F. 1a:] Rolandi capelluti Chrysopolitani Philosophi. parme[n] | sis: ad Magistru[m] Petru[m] de gnala[n]dris de parma: Cy | rugicu[m] optimum: Tractatus de curat[i]o[n]e pestiferoru[m] | apostematum. Incipit feliciter. | [Ad finem:] Rome impressum p[er] Ingeniosu[m] viru[m] Ma | gistru[m] Vdalricu[m] gallu[m] de Almania. |

[6] ff 4°. Romae, Ulricus Gallus s. Han de Vienna, [circa 1471.]
[Hain no. 4374.]

*122. Carvaial, Bernardinus Cardinalis S. Crucis, [circa 1450–1500 A.D.] Oratio in die circumcisionis Domini. [F. 1a:] § Oratio in die Circu[m]cisionis d[omi]nice in capella d[omi]ni n[ost]ri Sixti pa | pe. iiij. habita per Reuerendu[m] d[omi]n[u]m Bernardinu[m] Caruaial artiu[m] [et] | theologie magistru[m] S. d. n. cubiculariu[m]. Anno po[n]tificatus eiusde[m] | tertiodecimo. Salutis d[omi]nice. M.CCCCLXXXIIII. | [Expl. f. 8b l. 30: | beatitudine gloriemur. Amen.]

[8] ff 4°. Romae, Stephanus Plannck de Patavia, 1484.
[Hain no. 4546.]

*123. Castello, Turan de. [circa 1350–1407 A.D.] Tractatus de balneis. [F. 1a vacat. F. 1b:] De Thermis [etc. Est tab. operis F. 2a.] INCIPIT TRACTATUS DE BALNE | IS SECUNDUM GENTILEm de fulgi[n]eo. | [F. 11b:] Iste liter (sic) compositus est per egregium militem | & legum doctorem. & artium medicinae magist- | rum dominrm (sic) Turan de Castelo | Debile principium melior finisque sequeter | Explicit hoc opus per magistrum Joha[n]nem de | reno sub anno domini Milessimo (sic) quadrage[n]- ressimo | (sic) septuagessimo tertio die uigessimo qnarto (sic) martii. |

[11] ff. 4°. [Vicentiae], Johannes de Rheno, 1473.
[Hain no. 4592.]

*124. Cauliaco, Guido de. [1300-1370 A.D.] [Opera chirurgica.] [F. 1 vacat. desider.] [F. 2a:] Nel nome de dio co[m]me[n]za lo inue[n]tario | ouer colectorio che apartie[n] ala parte d[e] | la cirogia: co[m]posto e compido del a[n]no | de la incarnation del nostro signore | M.CCC.LXIII. p[er] lo clarissimo e famoso do | tor maistro. Guidon de gualiaco ciroi | co i[n] lo clarissi[m]o studio de mompolier. | [F. 239b:] Finisse la clarissima opera | *** Et impresso per maistro Ni- | colo girardengho de noue: In uene | sia nel. M.CCCCLXXX. adi do del mese | de nouembro. ***

[240] ff F°. Venetiis, Nicolaus Ghiradengus de Nove, 1480.
[Copinger no. 1548.]

*125. Cauliaco, Guido de. [1300–1370 A.D.] [Chirurgia cum aliorum tractatibus de eadem materia.] [F. 1a. tit.:] Cyrurgia parua Guidonis | Cyrurgia Albucasis cu[m] caute- | rijs [et] alijs instrumentis. | Tractatus de oculis Iesu hali | Tractatus de oculis. Canamusali | [Ad finem:] §Explicit liber de curis omnium passionum oculo[rum] que[m] fecit [et] composuit Canamusali philosophus De Baldach. | Uenetijs per Bonetum Locatellum p[r]esbyteru[m] Ma[n]- | dato [et] sumptibus heredu[m] quonda[m] Nobilis viri domini | Octauiani Scoti Modoetie[n]sis. Anno d[omi]ni. M.CCCCC. | sexto Kal. Feb[r]uarias. |

[68] ff il. F°. Venetiis, Octavianus Scotus, Modoetiensis per Bonetum Locatellum, Presbyter Bergomensis, 1500.
[Hain no. 4813.]

*126. Cebes. [circa 450–500 A.D.] [Tabula.] [F. 16a:] CEBETIS THEBANI TABVLA: E GRAECO IN | LATINVM CONVERSA PER LVDOVICVM | ODAXIVM PATAVINVM. |

[In- Censorinus. De die natali. *** 1497. ff 16–20.]

127. Celsus, Cornelius. [53 B.C.–7 A.D.] [De medicina libb. VIII.] [F. 1a:] PRIMO LIBRO CORNELII CELSI. | DE MEDICINA HAEC CONTINENTVR: | *** [F. 7b:] FINIT TABVLA. | [F. 8 vacat.] [F. 9b:] BARTHOLOMEVS FONTIVS SAXETTO SUO. S. | *** [F. 10a:] CORNELII CELSI DE MEDICINA LIBER INCIPIT. | *** [F. 196b:] CORNELII CELSI DE MEDICI | NA LIBER FINIT FLOREN | TIAE A NICOLAO IM |- PRESS VSANNO SALVTIS M | CCCC L | XXV | III. |

[196] ff 4°. Florentiae, Nicolaus Laurentii, Alemannus, 1478.
[Hain no. 4835.]
F. A^8 blank missing. First edition.

128. Celsus, Cornelius. [53 B.C.–7 A.D.] [De medicina libb. VIII.] [F. 1a:] AVRELII CORNELII CELSI MEDICINAE LIBER PRI- | MUS INCIPIT. | [F. 144b:] Cornelii celsi de medicina Liber finit. Impressum Mediolani Per Leo | nardum pachel & Vlderichum sinczenzeler. diligentissime emenda | tum. Anno salutis. M.CCCC.LXXXI. |

[152] ff F°. Mediolani, Leonardus Pachel et Ulricus Scinzenzeller, 1481.
[Hain no. 4836.]

**129. Celsus, Cornelius. [53 B.C.–7 A.D.] [De medicina libb. VIII.] [F. 1a:] AVRELII CORNELII CELSI MEDICINAE LIBER PRIMVS INCIPIT. | [F. 59b:] Cornelii celsi de medicina Finis. Impressor Ioannes rubeus Vercellensis fuit die viii. | mensis Iulii. M.CCCC.XCIII. Venetiis. |

[62] ff F°. Venetiis, Johannes Rubeus Vercellensis, 1493.
[Hain no. 4837.]

**130. Celsus, Cornelius. [53 B.C.–7 A.D.] [De medicina libb. VIII.] [F. 1a. tit.:] CORNELIVS CELSVS | [F. 2a:] AVRELII CORNELII CELSI MEDICINAE LIBER PRIMVS IN- | CIPIT | [F. 94a:] Impressum Venetiis per Philippum pinzi. Sumptibus d[omi]ni Benedicti fontana. Anno | d[omi]ni. M.CCCC.XCVII. die vi. Mai. |

[94] ff F°. Venetiis, Benedictus Fontana per Philippum Pintium de Caneto, Mantuanus, 1497.
[Hain no. 4838.]

131. Censorinus. [circa 200–280 A.D.] [De die natali.] [F. 1a. tit.:] Index librorum: qui in hoc uolumine continentur. | Censorinus de die natali. | Tabula Cebetis. | Dialogus Luciani. | Enchiridion Epicteti. | Basilius. | Plutarchus de Inuidia & Odio. | [F. 1b:] Ad nobilem Bartholomeum blanchinum Philippi Beroaldi Bon. epistola. | * [F. 38a:] Impressum Bononiae per me Benedictum hectoris bononie[n]sis adhibita p[er] uiribus solertia & diligentia. Anno salutis. M.CCCCLXXXX. VII. quarto idus Maii | Illustrissimo Io. Bentiuolo. reip. bonon. habenas foeliciter moderante. | Registrum. | [et insign. typogr. c. litt. B. f. r. ch. c. f. 40l. 38 ff c. marginal. et titt. column.]

[38] ff F°. Bononiae, Benedictus Hectoris, Bononiensis, 1497.
[Hain no. 4847.]

*132. Cerasianus, Johannes de Monte Regio. [circa 270–310 A.D.] [Repetitio c. sententiam sanguinis.] [F. 1a. tit.:] Repetitio famo | sissimi c. Sente[n]tia[m] sanguinis | bona [et] vtilis subti. Ne. cle. vel | mo. in qua plenissime [et] perluci- | de tractatur omnis materia ir | regularitatis Clericis perma | xime necessaria. | [F. 56a:] §Repetitu[m] [et] resumptu[m] est hoc c. Sententia[m] sanguinis | *** Imp[r]essumq[ue] p[er] Melchio | rem Lotter ciuem Liptzen. Anno [christ] i M.CCCC.-XCIX. |

[56] ff 4° Lipsiae, Johannes Breitenbach per Melchiorem Lotter, 1499.
[Hain no. 3771 and 4880.]

133. Cermisonus, Antonius. [–1441 A.D.] [Consilia medica.] [F. 1a. tit.:] Consilia Cermisoni. | Consilia gentilis. | Recepte gentilis de feb[r]ibus. | Tractatulus de balneis gentilis | Tractat[us] de tyriaca Fra[n]cisci caballi. | [F. 94a:] §Finit liber de animali theria pastillos theriaca[s]q[ue] confi- | ciente a Francisco Caballo B[r]ixiensi viro p[r]eclaro: Ue- | netijs editus. Ibidemq[ue] imp[r]essus [et]c.

[94] ff F°. Venetiis, [Octavianus Scotus, Modoetiensis per Bonetum Locatellum, Presbyter. Bergomensis, circa 1496.]
[Hain no. 4884.]

*134. Champerius, Symphorianus. [1472–1539 A.D.] [Practica nova in medicina.] [F. 1a. tit.:] P[r]actica noua | in medicina. | Aggregato[r]is lugdune[n]sis | domini Simpho[r]iani champerij de omnibus mo[r] bo[r]um generibus ex traditionibus gre= | co[r]um: latino[r]um: arabu[m]: peno[r]um | ac recentium aucto[r]um: Au | rei lib[r]i quinq[ue]. | Item eiusdem aggregato[r]is liber de | omnibus generibus feb[r]ium. | [F. 149b:] §Finitur tractatus de generibus feb[r]ium editus | a d[omi]no Simpho[r]iano champerio Lugdunen. Illu = | strissimi p[r]incipis ducis calab[r]ie: lotho[r]ingie et | barri [et]c. p[r]imario physico.

[155] ff 4°. [Lugduni, n. pub., circa 1500.]
[Hain no. 4907.]

*135. Champerius, Symphorianus. [1472–1539 A.D.] Dyalogus singularissimus *** in magicarum artium destructionem. [F. 1a. tit:] Dyalogus singularissimus et perutilis viri occullentissimi d[omi]ni simpho | riani lugdunen[si] in magicarum artiu[m] | destructionem cu[m] suis alexis de fa | cinatoribus de incubis et succubis- et de demonia- | cis p[er] fratre[m] Symonenorum de ulmo sacre pagine | doctorem et ordinis minorum fideliter correctibus. Est que dyalogus liber In quo ali. simul de aliqua | re co[n]fere[n]tes differentesque introducuntur. | [F. 1b. icon. xyl. F. 19b:] §Impressum per magistru[m] guillermum | Balsarin. XXVIIJ. die mensis augusti. | [F. 20a typ. insign.]

[20] ff. 4°. Lugduni, Guillermus Balsarin, [circa 1500.]
[Copinger no. 1570.]

*136. Chiromanthia.] [F. 1a. c. sign. a1:] Ex diuina philosopho[r]um academia: secundum nature vires ad extra: | chyromantitio: diligentissime collectum. [In fine:] Ex diuina philosopho[rum] academia collecta: chyromantica scientia na- | turalis ad dei laudem finit. Imp[r]essum Uenetiis per magistrum Er- | hardum ratdolt de Augusta. |

[25] ff 4°. Venetiis, Erhardus Ratdolt de Augusta, [circa 1480.]

[Hain-Copinger no. 4971.]
First edition.

*137. Collenucius, Pandulphus. [–1504 a.d.] [Pliniana defensio adversus Nicolai Leoniceni accusationem.] [F. 1a tit.:] Pliniana defensio Pandulphi Colle | nucij Pisaurensis iurisconsulti aduersus | Nicolai Leoniceni accusationem: [F. 5b: incipit opus ipsum. F. 52a in fine:] FINIS. Ut sese ostendat populos defensus in omnes | Plinius: Et teneat quem solet ante locum: | Ferrariae Andreas Belfortis Gallicus istud | Preastitit (sic) impressi codicis officiunt. |

[52] ff 4°. Ferrariae, Andreas Bellfortis, Gallus, [circa 1493.]
[Hain-Copinger no. 5483.]

*138. Compendium sententiarum Praeclarissimarum adversus astrologiam [F.] 1 vacat. F. 2a:] COMPENDIVM SENTENTIARVM PRAE | CLARISSIMARVM ADVERSVS | ASTROLOGIAM ET EIVS | FAVTORES. [F. 21b:] Finis. | Impressum Mutinae [per] M. Dominicum Rocociolam. |

[21] ff 4°. Mutinae, Dominicus Rochociola, [circa 1490.]
[Hain-Copinger no. 5570.]

*139. Concoregio, Johannes de. [circa 1380–1440 a.d.] Opus de aegritudinibus particularibus, flos florum vocatum. [P. I. F. 1a (c. sign. A^2):] ( ) Um omnis | scientia ex fi | ne ac ei[us] uti | litate natura | liter appeta | tur et cum | i[n]ter ceteras | scie[n]tias finis | medicine q[uam] | est santitate[m] | hominis co[n] | seruare [et] egritudinem remouere. *** [P. II. F. 65a:] Finis adest deo duce huic su[m]mule de cu | ris febriu[m] [secundum] clarissmum philosophum | [et] medicum Jo. concoregium quam ex | tractam ab originale concesso a prestan[tissim]o | artium [et] Medicine doctore Magistro | Lazaro dataro placentino theorica[m] me | dicine papie legente. Magister Antoni | us de carcano i[m]p[ri]mi curauit papie. 1485. | [Register.]

[121], [65] ff 4°. Papiae, Antonius de Carchano, Mediolanensis, 1485.
[Hain no. 5615.]

de Corbeil, Gilles
See—Aegidius Monachus

140. Crescentiis, Petrus de. [1230–1320 a.d.] [Opus ruralium commodorum.] [F. 1a. tit.:] Opus ruralium com | modo[r]um Petri de | crescentijs. | [Ad finem:] P[r]esens opus ruraliu[m] co[m]modo[rum Pe | tri de crescentijs *** imp[r]essum est argentine. | Anno domini. mcccclxxxvi. Finitum q[ui]n | ta feria ante festum sancti Grego[r]ij. |

[147] ff F°. Argentorati, [Johannes Reynardi alias Grüninger,] 1486.
[Hain no. 5831.]

Cuba, Joh. De
See—Hortus Sanitatis

*141. Culmacher, Philipp von Eger. [circa –1490 a.d.] [Regimen wider die Pestilenz.] [F. 1a. tit:] Regimen zu deutsch Magistri | philippi Culmachers vo[n] Eger | wider die grausamen ersch[r]ecklichenn Totlichen | pestelentz *** [F. 26a. I. 4.] behutten vnd vo[r]warn Amen. |

[26] ff 4°. [Lipsiae, Martinus Landsberg de Herbipoli, circa 1480.]
[Hain no. 5848.]

Damascenus, Joannes
See—Mesue Damascenus, Joannes

*142. Derrames Cyprius, Johannes. [circa 1450–1500 a.d.] [Carmina de conditionibus medicinarum solutivarum.] [F. 1a:] Joannis derrames Cyp[r]ij carmina ad eru- | ditu[m] Uatem Petrum paulu[m] Barbu[m] de pola | de conditionibus medicinarum solutiuarum. | [F. 6b:] Finis operis Die. 4. mensis Julij. 1487. |

[6] ff 4°. [Patavii, Matthaeus Cerdonis de Windischgraez,] 1487.
[Hain no. 6095.]

*143. [Dialogus creaturarum.] [F. 1a:] §Prefatio in lib[r]u[m] qui dicitur | dyalogus creaturaru[m] | mo[r]alizatus: omni materie | mo[r]ali iocu[n]do [et] edificatiuo [sic] | modo applicabilis Incipit | feliciter. | [F. 62b:] Presens liber dialogus creatura | rum appellatus: iocundis fabulis | plenus: industria [et] expensis Con | radi de hombech incole colonien. | inceptus [et] finitus est. Anno domi | ni millesimo q[ua]dringentesimo octo | gesimo primo me[n]sis octobris die | xxiiii. |

[62] ff F°. Coloniae, Conradus de Hoemborch, 1481.
[Hain no. 6126.]

*144. Dinus de Garbo Florentia, Med. [–1328 a.d.] [Expositio super tertia et quarta et parte quinte Fen Avicennae]. [F. 1a (c. sign. a i i):] Clarissimi artium [et] medicine doctoris | magistri Dini de Florentia expositio sup[er] | 3^{a}. [et]4^{a}. fen Auice[n]ne [et] super parte quinte | feliciter incipit. | [F. 175 a. col. 2:] Explicit expositio clarissimi artiu[m] [et] me | decine doctoris m[a]g[ist]ri Dyni de Flore[n]ita su | per. 3a. [et]4^{a}. fen Auice[nnae] sup[er] p[ar]te. 5^{e}. Im- | pressa Ferrarie p[er] prouidu-[m] viru[m] magistrum | Andrea[m] gallicu[m]. Anno d[omi]ni. 1489. die. 27 | mensis octobris. | Registrum *** FINIS. |

[175] ff F°. Ferrariae, Andreas Bellfortis, Gallus, 1489.
[Hain no. 6166.]

*145. DINUS DE GARBO DE FLORENTIA, MED. [–1327 A.D.] [Expositio super tertia et quarta et parte quinte Fen Avicennae]. [F. 1a. tit.:] Expositio Dini Flo[r]entini super ter= | tia [et] quarta [et] parte qui[n]te Fen quar= | ti canonis Auice[n]ne cum textu. | Ge[n]tilis de fulgineo sup[er] tractatu de lep[r]a. | Gentilis de flo[r]e[n]tia super tractatibus | de dislocationibus [et] fracturis. | Tractatus Dini de po[n]derib[us] [et] me[n]suris. | Eiusdem de emplastris [et] vnguentis. | [F. 162a:] Imp[r]essa Uenetijs co[m]missione [et] expensis p[ro]uidi viri do | mini Andree de To[r]resano de Asula: p[er]. M. Johannem | Hertzog alemanum de Landaw. Anno salutis domini: | 1499. die vero Decemb[r]is. 4. |

[162] ff F°. Venetiis, Andreas Toresanus de Asula per Johannem Hamman de Landovia, dictus Hertzog, 1499.
[Hain no. 6168.]

*146. DINUS DE GARBO DE FLORENTIA, MED. [–1327 A.D.] Compilatio emplastrorum. [F. 1a (c. sign. A):] Incipit compilatio emplastro[rum] [et] vngue[n]- | torum Magistri Dini florentini artiu[m] [et] | medicine doctoris excellentissimi. Et pri | mo de repercussiuis. [F. 16a:] Expliciunt vnguenta Dini Florentini | artiu[m] [et] medicine doctoris famosissimi ad | laudem dei omnipotentis Impressa Fer- | rarie p[er] prouidu[m] virum magist[rum] Andrea[m] | gallum. Anno domini. 1489. die 28. | Mensis octobris. | [Deinde 10 versus et registr.]

[16] ff 4°. Ferrariae, Andreas Bellfortis, Gallus, 1489.
[Hain no. 6170.]

*147. DIODORUS SICULUS. [circa –50 B.C.] [Bibliotheca seu historiarum priscarum libb. VI, e graeca in latinum traducti per Fr. Poggium.] [F. 1a tit.:] Diodorvs SICVLVS. | [F. 2a (c. sign a et n.):] POGIVS FLORENTINVS AD NICOLAVM QVINTVM pon. Max. | [F. 77b. in fine:] FINIS. | Explicit foeliciter opus Diodori siculi diligenter ac accuratissime emendatum | per Bartholomaeum Merulam: Acque Venetiis impraessum p[er] Magistru[m] Ioa[n]nem de Cereto de Tridino alias Tacuinu[m]. Anno salutis domi- | nice M.CCCC.LXXXXVI.XII. Kalen. Octobris. Impera[n]te Sere- | nissimo principe Augustino Barbadico. | Laus Deo iugiter. | [Ult. f. a. registr. et insign. typogr. c. litt. Z. T. f. r. ch. c. f. c. et ff. n. 45 et 46 l.]

[78] ff F°. Venetiis, Guillielmus [de Plano] Cereto de Tridino de Monteferrato cognomento anima mia, 1496.
[Hain no. *6191.]

*148. DIOGENES CYNICUS. [412–323 B.C.] [Epistolae. Diogenis Epistolae interprete Francisco Aretino. Bruti et Hippocratis epistolae per Rainucium traductae.] [F. 1a. tit.:] Diogenis Epistole | Bruti | Yppocratis medici. | [F. 2a:] FRANCISCI ARRENTINI ELEGIA | ad pium. ii. pontificem maximum. | *** [F. 54a. l. 4:] FINIS | FLORENTIAE | facta est harum epistola | rum impressio Per Antonium | Francisci Venetum. Anno Domini | M.CCCCLXXXVII.X. kalen. Iulias. |

[54] ff 4°. Florentiae, Antonius Francisci, Venetus, 1487.
[Hain no. 6193.]

*149. DIONYSIUS DE LEUWIS, ALIAS RICKEL, CARTHUS. [circa 1402–1471 A.D.] [Specula omnis status humanae vitae.] [F. 1a tit.:] Specula omnis humane vite. *** [F. 2a:] Que hoc libellulo contineantur. | [F. 4a:] § Tituli capitulo[rum] speculo[rum]. v. p. dyonisii prioris domus carthu | sie in roremund. | [F. 5a:] Incipit prologus. *** [F. 117b:] Opus p[rae]sens insigne [et] admodu[m] utile impen [sis Petri wagner Nürenberge effigiatu[m] feli | citer finit Anno salutis cristiane millesimo | quadringentesimononagesimoquinto feria | quarta post conuersionem sancti pauli. |

[118] ff 4°. Norimbergae, Petrus Wagner, (Curifex), 1495.
[Hain-Copinger no. 6246.]

150. DIOSCORIDES. [54–68 A.D.] [De materia medica.] [F. 1a. tit.:] [F. 1b:] Aldus Manutius Romanus, Hieronymo Donato | patritio Veneto. S. D. [Data est ep.:] Venetiis octauo Idus Iulias M. ID. [F. 2a. (c. sign. *II)-6a tab. F. 7a (c. sign. a): Pedacius Discorides Anazarbeus. ***] [F. 133b expl. Dioscorides. Registr. F. 134. vacat. F. 135a (c. sign. A:] [Nikander] [Hanc notitiam excip. ead. pag.:] [Nikander Theriaca] [F. 166a:] [Nikander Alexipharmaca] [F. 172a post registr.:] Venetiis apud Aldum. Mense Iulio M. ID.

[172] ff F°. Venetiis, Aldus (Pius) Manutius, 1499.
[Hain no. 6257.]
[Greek text.]

*151. DIOSCORIDES. [54–68 A.D.] [De materia medica.] [F. 1a:] Nota[n]dum q[uem] libri diasco[r]ides dicti duplex r[e]perit[ur] or | dinatio cum eodem tamen p[ro]hemio omnino. *** [Ad finem:] Explic[it] dyasco[r]ides que[m] petrus | paduane[n]sis legendo co[r]exit [et] expo | nendo q[uæ] vtilio[r]a su[n]t i[n] luce[m] deduxit. | Impressus colle p[er] magistru[m] ioh[ann]em | allemanum de medemblick. anno | xpi. millesimo. cccc°.lxxviij°. mense | iulij. |

[103] ff F°. Colle, Johannes Alemannus de Medemblick, 1478.
[Hain no. 6258.]

152. Dondis, Jacobus de, Paduan. Med. [1298–1359 a.d.] [Aggregator Paduanus de medicinis simplicibus.] [F. 1a:] [F]Ructife[rum] medicis actu | rus opus: non modo | rudibus tantu[s] & iuue | nibus *** [F. 1a. col. 2. ll. 52–55:] Opus quide[m] hoc longis retro | t[ardi]p[ed]ibus inchoatu[m] [com]pletu[m] est p [er] me artiu[m] et | medici[n]e docto[r]e[m] M[a]g [istrum] Iacobu[m] paduanu[m] | Anno d[omi]ni. m.ccc. octuagesimo quinto. | [Ad finem:] Tenasmoni licinium. hali. ibidem. |

[286] ff F°. [Argentorati, R. singulare, circa 1470.]
[Hain no. 6395.]
Earliest known of medical incunabula—F. H. Garrison.

*153. Epictetus. [circa 60–120 a.d.] [Enchiridion.] [F. 21a. (c. sign. e):] ENCHIRIDION. | ANGELI POLITIANI IN EPICTETI STOICI ENCHIRIDION E GRAECO A SE INTERPRETATVM AD LAV | RENTIVM MEDICEM EPISTOLA: |

[In- Censorinus. De die natali. *** 1497. ff 21–28.]

154. Epistolae graecae variorum auctorum. [Partes II. P. I. f. 1a tit.:] Epistolae diuersorum philosophorum. ora- | torum. Rhetorum sex et uiginti. | Quorum nomina in se | quenti in uenies | Pagina. | [F. 1b haec nomina graece, f. 2a. vero latine leguntur. F. 2a(c. sign. *ii) (sic):] Epistolares stili et nomina eoru[m] qui co[m]posueru[n]t quas | hoc uolumen continet | epistolas. | [F. 265a:] [Seq. registr., quod excip. f. 266a subscr:] Venetiis apud Aldum mense Martio. M. ID. cum pri- | uilegio ut in caeteris. [P. II. f. 1a tit. 2. col. gr. et lat.:] EPISTOLAE [| Basilii Magni | [etc.] [F. 1b:] Aldus Manutius Romanus Antonio | Codro Vrceo. S. P. D. [Data est haec dedicat.:] Venetiis quinto- | decimo calendas maias M. ID.] [F. 137b post registr.:] Venetiis apud Aldum. eade[m] qua caetera co[n]ditione. |

[266] et [137] ff 4°. Venetiis, Aldus (Pius) Manutius, 1499.
[Hain no. 6659.]

Eresius
See—Theophrastus

*155. Eyb, Albertus de. [1420–1475 a.d.] Ob einem Manne zu nehmen ein ehelich Weib. [F. 1a tit.:] Ein nutzparlichs puchlein ge= | macht von dem hochgelehrten | Herrñ Albrecht von Eybe beyder recht doctor. Ob | einem mãne sey zunemen ein eelichs weyb oder nit. | [F. 1b:] Je natuerlichen meister haben in irer schule und | ubung furgenõmen unnd gedisputieret ein heup= | sche gemeine frag. [F. 2a (c. sign. A ij et n. j.):] § Ob einem manne sey zunemen | ein eelich weyb oder nit. | [Expl. f. 53b (c. n. lij.) l. 32.:] schnee in gegenwertigkeit deiner gotheit Amen. | [F. 54a tab. et insign. typogr.]

[54] ff 4°. [Lipsiae, Martinus Landsberg de Herbipoli, circa 1472.]
[Hain no. 6828.]

156. Faber Stapulensis, Jacobus. [circa 1455–1536 a.d.] [In Aristotelis octo Physicos libros Paraphrasis.] [F. 1a. vacat. F. 2a:] Littere librorum | PCGMASMRSUL | P. Liber physicorum. C. Liber de celo [et] mu[n]do. G. | Liber de generatione [et] corruptione. M. Liber methe = | ororum. A. Liber de anima. S. Liber de sensu [et] sen= | sato. MR. Liber de memoria | [et] reminiscentia. | SU. Liber de somno et vigilia.

L. Liber de longitudine et | breuitate vite. | [F. 9a. c. sign. b. i:] Prologus in physicos libros Aristotelis. | [F. 87b. in fine:] Paraphrasis Octo Physicorum | Aristotelis finis. | [F. 88 vacat. desider. F. 89a. c. sign. m. i.] L 1 | Tabula i liprimbri de celo [et] mundo. | [F. 309a. l. 12:] Carmen decastichum Judoci Clichthoue regratiato | rium eorum: qui hoc opus imprimi curauerunt. | *** Impressum Parisii. Anno domini millesimo quadringe[n] | -tesimo nonagesimo secundo. | [F. 310b. typ. xyl.]

[310] ff il. 1 pl. 4°. Parisiis, [Johannes Higmann, Germanus], 1492.
[Hain-Copinger no. 6839.]

*157. [Fagifacetus s. de Facetia et Moribus Mensae.] [F. 1a tit.:] De moribus et | facetijs mense. | [F. 2a.] Thesmophagia | [R]ES, rerum natura parens, ita [con]cipit o[mn]es | Et parit: vt nate, potuq[ue] ciboq[ue] dietim | Indigea[n]t pasciq[ue] veli[n]t, aut viuere noli[n]t | [etc.] [Versus lat. et translatio germ. altern. F. 20a:] Noscere qui mensis decori sint lector honores | Si cupis aut mores: dogmata nostra legas. | Grecia legifere cereri sua thesmophoria Indidit: at per nos thesmophagia patet. | Translatum in theutonicum | Basilee per Sebastianu[m] Brant | Utriusq[ue] iuris doctorem. An | no [etc.] Nonagesimo kalendis aprilibus. |

[20] ff 4°. Basileae, [Michael Furter,] 1490.
[Hain no. 6900.]
[Text, Latin and German.]

Falcucci
See—Nicolaus Falcutius
Falcutius, Nicolaus
See—Nicolaus Falcutius
Farinator, Mathias. ***
See—Lumen Animae.

158. Fasciculus Temporum (Auctore Wernero Rolevinck Carthusian.) [–1502 a.d.] [F. 1a. tit.:] Fasciculus temporum omnes an | tiquorum cronicas complectens. [F. 1b. icon. xyl. F. 2a (c sign. ij):] Tabula breuis [et] Vtilis sup[er] li | bro illo q[uo] d[icitu]r Fascic[u]lus tempo | ru[m]. [etc.] incipit feliciter. | [F. 7a. (c. sign. A et n. 1.):] (g) Eneratio et generatio laudabit opera tua | [et] potentiam tuam pronunciabunt. [etc.] [Term. f. 96b. (c. n. xc) hac lin.:] *** strage multorum. |

[96] ff 4°. [Argentorati, Johannes Pryss, circa 1490.]
[Hain-Copinger no. 6915.]

*159. Fasciculus Temporum (Auctore Wernero Rolevinck Carthusian). [–1502 a.d.] [F. 1a (c. sign. a²):] ( ) Eneratio et generatio laudabit op[er]a tua et potentia[m] tua[m] p[ro]nu[n]ciabunt. Scribit psal. 144. Cu[m] non si |. [F. 63b:] Opusculu[m] vtique omni statui. atque hominu[m] gradui ad vita[m] exemplan | dam p[er] utile. co[n]tinens succinte p[ro]gressum patrum ab inico[n] mundi vsque | ad hoc nostrum te[m]pus. cu[m] actis notabilioribus eorunde[m] Q[uo]d deuotus q[ua]dam Carthusien. eius autor. j. Fasciculu[m] t[em]p[oru]m nu[n] cupauit Imp[re]ssum | p[er] me Henricu[m] quentel Et admissu ab alma viuersitate Colonien[sis] | Explicit feliciter Sub anno d[o]m[ini]. 1480. LAUS DEO. | [F. 64a:] Tabula. *** [Expl. f. 71a f. maj. g. ch. c. f. c. figg. xyl.]

71 ff F°. [Coloniae], Henricus Quentell, Coloniensis, 1480.
[Hain no. 6925.]
[*F. 68–71 mutilated.*]

160. Fasciculus Temporum (Auctore Wernero Rolevinck Carthusian.) [–1502 a.d.] [F. 1a. tit.:] Fasciculus tempo[rum] omnes anti | quorum cronicas complectens. | [F. 1b–6b. Tabulae.] [F. 7a. (c. sign. A):] Folium primum. | (g) Eneratio [et] generatio laudabit opera tua. et | [F. 96b:] Impressum Argentine per Joha[n]nem | pry[ss]. Anno domini. mccccLXXXVIIJ. |

[96] ff il. 4°. Argentorati, Johannes Pryss, 1488.
[Hain no. 6937.]

*161. Ferrariis, Theophilus de, Ordin. Praedicat. [circa 1420–1480 a.d.] Propositiones ex omnibus Aristotelis libris philosophicis [etc.] collectae. [F. 1a. tit.:] Propositiones ex omnibus Aristotelis libris philosophie. Moralis | [F. 57a (c. sign. a) rubro;] INCIPIUNT PROPOSITIONES COPIOSISSIME AC FIDIS | SIME EX OMNIBVS ARISTOTELIS LIBRIS COLLECTAE PER | FRATREM THEOPHILUM DE FERRARIIS CREMONENSEM | VITAE REGULARIS SACRI ORDINIS PRAEDICATORUM; | ET PRIMO EX LIBRIS METAPHYSICAE: ANNOTATIOQuE | LECTIONVM VT EXPOSITIO DIVI THOMAE AQuINATIS | REQuIRIT POSITA EST. | [F. 343a (c. falso num. 258:] FINIS. | Impressum Venetiis per Ioannem et Gregorium de gregoriis | Anno ab incarnatione. MCCCCLXXXXIII. die iii. Augusti. | [Registr. F. 343b: in fine:] AVGVSTINO BARBADICO SERE | NISSIMO VENETIARUM PRINCIPE REM | PUBLICAM TENENTE. |

[343] ff 4°. Venetiis, Johannes et Gregorius de Gregoriis de Forlivio, 1493.
[Hain no. 6997.]

*162. Ficinus Florentinus, Marsilius. [1433–1499 a.d.] [Epistolae.] [F. 1a. tit.:] EPISTOLAE MAR | SILII FICINI FLO | RENTINI. | [F. 253b:] Marsilii Ficini Florentini Eloquentissi | mi Viri Epistolae familiares Per Anto- | nium Koberger impraesse Anno incar- | nate deitatis. M.CCCC.-XCVII.XXIIII. febru | arii finiunt Foeliciter. |

[253] ff 4°. [Norimbergae], Antonius Koburger, 1497.
[Hain no. 7062.]

*163. Ficinus Florentinus, Marsilius. [1433–1499 a.d.] [De triplici vita.] [F. 1a:] CAPITVLA PRIMI LIBRI QVI | TRACTAT DE VITA SANA. | [F. 2a expl. tab. F. 2b:] Cursim Recognita. | [F. 3a (c. sign. a i):] Prohemium Marsilii Ficini Florentini In Librum De Vita Ad | [F. 4a (c. sign. a ii):] DE CURA VALITUDINIS EORVM | QVI INCUMBVNT STVDIO LITTERARVM. | [F. 89b:] Impressit ex archetypo Antonius Mischominus | Florentiae Anno Salutis. M.CCCCLXXXIX | Tertio Nonas Decembr. | [Insign. typogr. c. litt.] A. M. [F. 90a:] REGISTRUM. |

[90] ff 4°. Florentiae, Antonius Bartholomaei Mischominus, 1489.
[Hain no. 7065.]

*164. Ficinus Florentinus, Marsilius. [1433–1499 a.d.] [De triplici vita]. [F. 1a:] §Marsilius Ficinus Florentinus | de triplici vita. | [Typogr. insign.] [F. 136a, explicit apologia, l.20:] uitam producendam adhibite moriuntur. | XVI. Septe[m]bris. M.CCCCLXXXVIIII. In agro | Caregio. | [F. 137a (sig. A):] Tabula. | CAPITULA PRIMI LIBRI QUI TRA | CTAT DE VITA SANA. | [F. 140a. l. 3. In fine:] rias mundana potissimu[m] dona. cap. xxvi. |

[139] ff 4°. [Parisiis, Georgius Wolff, circa 1492.]
[Copinger no. 2497.]
Imperfect. f b5 missing.

165. Ficinus Florentinus, Marsilius. [1433–1499 A.D.] Platonica theologia de animorum immortalitate. [F. 1. vac. F. 2a:] Capitula librorum theologie de i[m]mortalitate animoru[m] Marsilii ficini | florentini diuise in libros. XVIII. Primus liber adscendit usq[ue] ad deu[m]. | [etc.] [F. 6a:] FINIS. [F. 6b:] QVEDAM ADDITA ET QVEDAM EMENDATA. [F. 10 vacat. F. 11a:] MARSILII FICINI FLORENTINI PROHEMIUM IN PLA | TONICAM THEOLOGIAM DE ANIMORUM IM | MORTALITE AD LAVRENTIVM MEDI | CEM VIRUM MAGNANIMVM. [F. 12a (c. sign. ai):] IN OMNIBVS QVE AVT HIC AVT ALIBI A ME TRA | CTANTVR, TANTVM ASSERTVM ESSE VOLO | QVANTVM AB ECCLESIA COMPROBATVR. | MARSILII FICINI FLORENTINI PLATONICA THEO | LOGIA DE IMMORTALITATE ANIMORUM AD | LAVRENTIVM MEDICEM. V. MAGNANIMVM. [F. 318b:] FINIS. | Impressum Florentie Per Antonium Miscominum | Anno salutis. M.CCCCLXXXII. | VII. Idus Nouembris.] [F. 319 registr.]

319 ff. 4°. Florentiae, Antonius Bartholomaei Mischominus. 1482.
[Hain no. 7075.]

*166. Ficinus Florentinus, Marsilius. [1433–1499 A.D.] Consiglio contro la pestilenzia. [F. 1a. c. sign. ai:] CONSILIO DI Marsilio ficino florenti | no contro la pestitentiae: | [F. 51b:] :FINIS: | Impressum Florentie apud | Sanctum Jacobu[m] de | Ripolis: | M: | CCCC: LXXXI; | Laus deo & gloriose uirgini Marie: |

[51] ff. 4°. Florentiae, Monasterium S. Jacobi de Ripoli, 1481.
[Hain no. 7082.]

*167. Fiera, Baptista, Med. Mant. [1469–1538 A.D.] [Coena seu de cibariorum virtutibus.] [F. 1a:] Baptist[a]e Fiera Mantuani medici Coena. | [F. 19a:] Baptistae Fiera Mantuani medici Coena: | hic consummata est. Index autem sequitur. |

[20] ff 4°. [Venetiis, Georgius Cristiner de Boll, circa 1485.]
[Reichling no. 1199.]

*168. Firmicus Maternus, Julius De nativitatibus. [F. 1a. tit:] Ivlius Firmic[us] | de natiuitatibus. | [F. 2a.:] §Tabula Libri Iulii Firmici. [F. 4a. col. 2:] §Ioanis Pompeii Corniani Brixiani ad Lectorem in Iulium Firmicum. [F. 5a:] §Iulii Firmici Materni Iunioris Siculi Viri Clarissimi ad | Mauortiu[m] Lollianum Fascibus Ca[m]paniae Romanae prouin | ciae proco[n]sulem designatum: *** [F. 119a (CXVa):] IVLII FIRMICI MATERNI IVNIORIS. V. C. MATHESEOS LIBER | SEPTIMVS ET VLTIMVS FELICITER EXPLICIT. | EPISTOLA. [In fine.] DEO GRATIAS IN ETERNVM. | [F. 119b (CXVb):] §Nicolaus Amerinus. | §Registrum. | *** [In fine:] Impressum Venetiis p[er] Symonem | papiensem dictum biuilagua. | 1497. die 13 Iunii. |

[119] ff il. F°. Venetiis, Simon Bivalaqua Papiensis, 1497.
[Hain no. 7121 bis.]
First edition. Has xylographic Gothic title.

169. Flandria, Dominicus de Ord. Praedic. Quaestiones in duodecim Metaphysicae libros Aristotelis. [F. 1a tit.:] Questionum super. xii. libros Metha |- phisice a. R. Magistri Domini | ci de Flandria ordinis | predicatorum. | [Fig. angeli ligno incisa. F. 2a (c. sign. Ä²):] § Tabula questionum super. 12 libros Methaphisice. | Aris. Magistri D[omi]nici de Flandria ordinis predicatorum. | [F. 5a (c. sign. a) rubro:] § Perutiles atque preclare Questiones eruditissimi sa | cre theologie p[ro]fessoris fratris D[omi]nici Flandrensis ordi | nis p[re]dicatorum vite regularis aggregationis Lombardie in duodecim Methaph[ys]ice libros Aristotelis; [summu]m pro- | cessum et expositionem doctoris anglici Thome de | Aquino ordinis predicatorum. | [F. 350a:] § Explicit liber duodecimus diuine ph[ilosop]hie [summu]m magistru[m] | D[omi]nicum de flandria ordinis predicatorum. | Impressum Venetiis Anno d[omi]ni | M.CCCC.XCIX. | die xx. Augusti. | Cum priuilegio. | [Registr. et sig. angeli xyl. f. g. ch. c. f. et c. 2 col. 71 et 72 l.]

[350] ff F°. Venetiis, [Petrus Iohannes de Quarengis de Palazogo], 1499.
[Hain no. *7125.]

170. Forlivio s. Foroliviensis, Jacobus de Medic. Patav. [–1418 A.D.] [Expositio in primum librum canonis Avicennae.] [F. 1a. tit.:] Expositio Jacobi fo[r]liuiensis super

cano | nis Auicenne cum questionibus eiusdem. | [F. 36 (c.sig.EE6) col. 1.l.24:] § Scripta Flore[n]tie et [com]pleta p[er] me Ugone[m] Se | ne[n]sem. Anno domi[ni] ab i][n]carnat[i]one. i42i. [sic] die. 2. Januarij ame[n] | [Tabula. Registrum.] FINIS | [Insign. typ.] O.S.M.

[126], [36] ff F°. [Venetiis, Octavianus Scotus, Modoetiensis per Bonetum Locatellum, Presbyter. Bergomensis, circa 1495.]
[Hain no. 7245.]

*172. [Formula Vivendi Canonicorum.] [F. 1a. vacat. F. 2a (c. sign. a^1):]§ Incipit tabula formule viue[n] | di canonicorum. | [F. 3a (c. sign. a^2):] § Explicit p[rese]ns tabula istius seque[n]tis formule. | [F. 3b:] Formula viue[n]di canonico[rum] [F. 23b. l. 19;] § Explicit formula viuendi canonico[rum]. | [F. 24a. in fine:] Porro | etiam ceteri seculares clerici precipue vicarij aliiq[ue]. presbiteri et in sacris constituti eandem regulam vel | formulam animadvertant. Nam et ipsi in ea modu[m] | viuendi sibi co[n]gruum descriptu[m] habent. |

[24] ff 4°. [Coloniae, Arnoldus Therhoernen, circa 1480.]
[Hain-Copinger no. 7253.]

Franciscus de Pedemontio
See—Mesue Damascenus, Johannes

Frisius, Joannes Canter
See—Canter Frisius, Johannes

Fulginas, Gentilis
See—Gentilis Fulginas, Med.

*173. Fulgosus, Baptista. [circa 1440–1488 A.D.] Anteros (ie tractatus contra amorem, italice, per modum dialogi.) [F. 1a:] BAPTISTE. C. FULGOSI | ANTEROS. | [F. 1b tab. xyl. F. 2a:] PLATINVS IN ANTEROTA ILLVSTRIS | BAPTISTE. C. FVLGOSI AD LECTOREM. | [F. 2b;] AVCTOR. TYRONIBUS. AMORIS. | [F. 3a:] BAPTISTAE. C. FVLGOSI. ANTEROTIS(sic) AD | SPLENDIDVM: EQ VITEM-(sic) IOANNEM. | FRANCISCVM PUSTERLAM LIBER PRI |-MVS. PROLOGVS. | [In fine post auct. apostrophem ad lib.] Impressum Mediclani per Magistrum Leonardum | Pachel Anno Domini. M.CCCCLXXXXVI die. x. Maii. | [4. r. ch. c. f. ak. 29 l.]

[78] ff 4°. Mediolani, Leonhardus Pachel, 1496.
[Hain no. 7393.]

Gaddesden, Johannes
See—Anglicus de Gatisden, Johannes

*174. Galenus, Claudius. [–1478 A.D.] [Liber de facile acquisibilibus.] [F. 11a. col. 1. l. 40:] Incipit liber Gal. de facile acquisibilibus. | [F. 18a. in fine:] Finis huius tabulis capitulorum. |

[In- Tractatus de urinis. circa 1490. ff 11a–18a.]
[Not in Hain.]

*175. Galeottus Martius Narniensis. [–1478 A.D.] [Liber de homine.] [F. 1 vacat.] [F. 2a:] GALEOTTIMARTII NARNIENSIS | AD. R. D. ARCHIEPISCOPVM STRIGO | NIENSEM IN LIBRVM DE HOMINE EPISTOLA. *** [F. 76a:] Galeotti Martii Narniensis Secundus & ultim[us] | de homine Liber explicat. |

[76] ff F°. [Venetiis, circa 1470.]
[Hain no. 7433.]

*176. Galeottus Martius Narniensis. [–1478 A.D.] [Refutatio objectorum in librum de homine a Georgio Merula.] [F. 1 vacat. desider.] [F. 2a:] Galeotti Martii Narnie[n]sis Epistola Ad Illu | stri. Pri[n]cipe[m] Federicu[m] Duce[m] Vrbini Incohat. | [F. 104a:] Impressu[m] est opus Venetiis mirabili arte | ac diligentia Per Iacobum Rubeum Na | tione Gallicum huius artis p[er]itissimum. An | no incarnationis dominice millesimo CCCC | LXXVI. Andrea Vendremino inclyto Duce | Venetiarum. | Laus omnipotenti deo. |

[104] ff 4°. Venetiis, Jacobus Rubeus, (Rouge, Rossi) Gallicus, 1476.
[Hain no. 7437.]
Imperfect. ff 53–68 missing.

Garbo, Dinus de
See—Dinus de Garbo de Florentia. Med.

*177. Gazius, Antonius. [1449–1528 A.D.] Corona florida medicinae sive de conservatione sanitatis.] [F. 1a. tit.:] DE CONSERVATIONE SANITATIS. | [F. 2a:] Incipit tabula Capituloru[m] libri huius solemnissimi | qui Corona Florida Medicinae: siue Conseruatio | sanitatis: intitulatur. | [F. 123b:] Impressum uenetiis per Iohannem de forliuio & | Gregorium fratres Anno salutis. M.CCCCLXXXXI. die | xx me[n]sis Iunii. |

[123] ff F°. Venetiis, Johannes et Gregorius de Gregoriis de Forlivio, 1491.
[Hain no. 7501.]

**178. Geber, Med. Arab. [702–765 A.D.] [Summa perfectionis magisterii, liber trium verborum, Epistola Alexandri M., Geberi lib. investigationis magisterii, carmina lat. et Fr. de Asculo, Fratris Eliae et anonymi carmina ital.] [F. 1a:] INCIPIT LIBER GEBER. | Capitulum Primum. | [F. 114a:] Explicit liber Geber foeliciter. |

[122] ff 4°. [Romae, Eucharius Silber, circa 1475.]
[Hain no. 7505.]
Imperfect. f 56 missing.

179. Gellius, Aulus. [circa 130–180 A.D.] Noctes Atticae. [F. 1a vacat. F. 1b.:] AVLI GELII NOCTIVM ATTICARUM COMMENTARII CAPITVLA PRIMI LIBRI. | [F. 18a (c. sign. a i i):] AVLI GELII NOCTIVM ATTICARVM COMMENTARII | [F. 198a:] FINIS: IMPRESSI VENETIIS PER ANDREAM IACOBICA | THARENSEM. M.CCCC.LXXVII. ANDREA VENDRA. | MENO DVCE VENETIARVM INCLYTO. |

198 ff 4°. Venetiis, Andreas Jacobus Catharensis, 1477.
[Hain-Copinger no. 7520.]

180. Geminiano, Johannes de S. Ord. Praedic. [–1328 A.D.] [Summa de exemplis et similitudinibus rerum.] [F. 1a tit.:] Summa de Exemplis Ac | similitudinibus reru[m] | Nouiter im | p[r]essa. | [Ad finem:] Imp[r]essum aut[em] Uenetijs per Ioa[n]ne[m] [et] G[r]egorium de G[r]ego[r]ijs fratres. | MCCCCLXXXXVIJ. die. x. Ap[r]ilis. | FINIS. |

[404] ff 4°. Venetiis, Johannes et Gregorius de Gregoriis de Forlivio, 1497.
[Hain no. 7545.]

181. Geminiano, Johannes de S. Ord. Praedic. [–1328 A.D.] [Summa de exemplis et similitudinibus rerum.] [F. 1a tit.:] Summa magistri Ioha[n]nis | de sancto Geminiano ordi | nis fratru[m] predicato[rum] de ex | emplis [et] si[mi]litudinibus re[rum.] [F. 1b:] Clarissimo theologo sacratissimi dei studij expositori magistro Michael wildeck: | *** [F. 342a:] Explicit summa magistri Iohannis de | sancto Geminiano ordinis predicato[rum] in | signis [et] p[er]utilis: de exemplis [et] similitudi | nibus rerum: Impressa per magistros Io | hannem Petri de Langendorff [et] Iohan | nem froben de Hammelburg Basilien[sis]. vr | bis ciues Anno domini. M.CCCC.XCIX. in | die conuersionis sancti Pauli. |

[342] ff 4°. Basilae, Johannes Frobenius de Hamelburg, 1499.
[Hain no. 7546.]

*182. Gentilis Fulginas, Med. [–1348 A.D.] [Super quinto canonis Avicennae.] [F. 1a:] Incipit sole[m]ne [et] fidele scriptu[m] ge[n]tilis | de fulgineo. sup[er] qui[n]to canonis. Auicene. | [F. 52b:] Hic finitur singularis expositio claris | simi docto[r]is Gentilis de Fulgineo super | quinto canonis Auicene *** Impensa Ie | ronimi de dura[n]tibus impressa. | Explicit. Laus deo. |

[52] ff F°. [Papiae], Hieronymus de Durantis, [circa 1485.]
[Hain no. 7568.]

183. Gentilis Fulginas, Med. [–1348 A.D.] [De proportionibus medicinarum.] [F. 1a:] [G]Racia lucidio[r]is habitus quem mesue denotat in mo | dis [et] p[ro]po[r]tionibus medicina[rum] que inuice[m] [con]fici debe[n]t | *** [F. 10b.] Explicit tractatus Gentilis de fulgineo. de p[r]oporcionib[us] me | dicinarum. ***

[10] ff 4°. [Patavii, Matthaeus Cerdonis de Windischgraez, circa 1480.]
[Hain no. 7569.]

*184. Gentilis Fulginas, Med. [–1348 A.D.] [Consilia.] [F. 1a:] Incipiunt co[n]silia peregregia clarissimi | [et] toto o[r]be medici. Celeb[r]atissimi gen | tilis de fulgineo. P[rimu]m consiliu[m] p[r]o uno me | lancolico. | [F. 47a:] Finit. Laus deo. |

47 ff F°. [Papiae,] Hieronymus de Durantis, [circa 1485.]
[Hain no. 7574.]

185. Gerson, Johannes Cancellar. Paris. [1363–1429 A.D.] Opera. [Vol. 1. F. 1a tit.:] Prima pars operu[m] | Johannis Gerson. | [F. 1b. icon. xyl.] [F. 234a in fine.] finit feliciter. | Anno d[omi]nice natiuitat. | 1489. mensis v[er]o Mar | cij Idus quarto. | [Vol. II. F. 1a tit.:] Secunda pars operum | Johannis de Gerson. | [F. 1b. icon. xyl.] [F. 230b. in fine:] Explicit felicit. Anno sa | lutis. M.CCCCLXXXIX. Duodecimo v[er]o kalen[das]. me[n] | sis Aprilis. | [Vol. III. F. 1a tit.:]. Tertia pars operum Johannis | Gerson doctoris christianissimi | [F. 1b. icon. xyl.] [F. 320b in fine:] eme[n]datissima lima castigata fuere | anno d[omi]ni. MCCCCLXXXXIX.XIJ. kal[endas] me[n]s[is] Aprilis. | [Insign. typogr. et versus:]

3 v. 3 pl. F°. Basileae, Nicolaus Kessler, 1489.
[Hain no. *7624.]

*186. Gerson, Johannes, Cancellar. Paris. [1363–1429 A.D.] [Conclusiones de diversis materiis moralibus, s. de regulis mandatorum s. libellus canonum moralium.] [F. 1a:] Incipit prologus sup[er] conclusiones | de diuersis materijs moralibus vti | les valde posite per m[a]g[ist]r[u]m iohanne[m] gerson. doctorem theologie eximiu[m] | ac Cancellarium parisiensem. | [F. 38b:] Expliciunt conclusiones de diuersis mate | rijs moralibus vtiles valde posite per | m[a]g[ist]r[u]m Ioh[ann]em gerson doctore[m] theologie |

eximiu[m] ac ca[n]cel. ecc[les]ie b[eat]e marie parisien[sis]. |
[38] ff 4°. [Coloniae, Udalricus Zell de Hanau, Clericus, 1470.]
[Hain no. 7639.]

*187. Gerson, Johannes, Cancellar. Paris. [1363–1429 a.d.] De simplificatione, stabilitione et mundificatione cordis. [F. 1a:] Incipit tractatus de Simplificac[i]o[n]e stabilic[i]o]ne seu mu[n]dificac[i]one cordis M[a]g[ist]ri Joha[n]nis | Gerson Ca[n]cellarij p[ar]isien[sis]. [F. 67a. I. 9. ss.:] Ioha[n]nes Gerson aduersus doctrina[m] cui [us]= | dam medici in mo[n]tepessulano sculpe[n]tis in | numismate figuram leonis cu[m] certis ca | racrerib[us] p[ro]curacione renu[m] finit feciliter (sic) [etc.] |. (P)Rima p[ro]posic[i]o Omne op[us] dei altissimi | sanctu[m] est [et] laudabile. [F. 69a:] Opusculu[m] cui[us] supra finit feliciter [etc.] |
[69] ff 4°. [Coloniae, Udalricus Zell de Hanau, Clericus, circa 1472.]
[Hain no. 7681.]

* 188. Gerson, Johannes, Cancellar. Paris. [1363–1429 a.d.] [De cognitione castitatis et pollutionibus diurnis, etc.] [F. 1a:] Incipit tractatus venerabil[is] m[a]g[ist]ri Iohan[nis] Gerson Cancellarij parisien | sis de cognicione | castitatis et pollucionibus diurnis. | [F. 14a:] Explicit tractatulus vene[r]abilis magistri | Ioh[ann]is | gerson de pollutionibus diurnis. | [F. 14b:] Incipit fo[r]ma absoluc[i]onis sacramental[is] | eiusdem Magistri Ioha[n]nis Ge[r]son. | [F. 16b:] Explicit fo[r]ma absoluc[i]o[n]is sacrame[n]talis ve | nerabilis M[a]g[ist]ri Ioh[annis] Gerson. deo laus.
[16] ff 4°. [Coloniae, Udalricus Zell de Hanau, Clericus, 1470.]
[Hain no. 7691.]

*189. Gerson, Johannes, Cancellar. Paris. [1363–1429 a.d.] [De pollutione nocturna, an impediat celebrantem vel non. | [F. 1a:] Incipit Tractatulus venerabilis M[a]g[ist]ri | Joh[annis] Ger[son] ca[n]cellarij parisien[sis] tracta[n]s de pollu | c[i]o[n]e noctu[r]na. an impediat celebra[n]tem vel no[n]. | [F. 15b:] Explicit Tractatulus venerabilis Magistri | Iohannis Gerson de pollutione nocturna | An impediat celebrantem? An non? |
[15] ff 4°. [Coloniae, Udalricus Zell de Hanau, Clericus, 1470.]
[Hain no. 7695.]
Rare edition, from the first press at Cologne.

Giacomo della Lorre
See—Forlivio. s. Foroliviensis, Jacobus de

*190. Gilinus, Corradinus. [–1506 a.d.] [De morbo quem Gallicum.] [F. 1a:] Co[r]adinus gilinus arctium [et] medicinae docto[r] de mo[r]bo quem | gallicum nuncupant ad Illustrissimum. D. sigismundu[m] esten. | [Ad finem:] Finis. |
[4] ff 4°. [Ferrariae, Andreas Bellfortis, Gallus, circa 1497.]
[Not in Hain.]

Gilles de Corbeil
See—Aegidius Monachus

Gilles de Rome
See—Aegidius Columna Romanus

Glanvilla, Angel. Barth.
See—Bartholomaeus de Glanvilla, Anglicus

191. Gordonio, Bernardus de, Medic. Montis Pessulani. [circa 1285–1307 a.d.] [Practica dicta lilium medicinae.] [F. 1 vacat. desider.] [F. 2a:] In nomine dei miserico[r]dis incipit | p[r]actica excelle[n]tissimi medicine monar | ce domini magistri Bernardi de Go[r]= | donio dicta Lilium medicine. | [F. 205b:] Imp[r]essa Lugduni per Anthoniu[m] la[m]bil | lionis [et] Marinu[m] sarraceni: co[n]socio[r]um | Anno d[omi]ni. 1491. die 2. maij. Ad laudem | o[mn]ipote[n]tis dei tociusq[ue] curie celestis. ame[n]. | ***
[206] ff F°. Lugduni, Antonius Lambillionis et Martinus Saracenus, 1491.
[Hain no. 7797.]

*192. Gordonio, Bernardus de, Medic. Montis Pessulani. [circa 1285–1307 a.d.] [Practica dicta lilium medicinae.] [F. 1 vacat. desider.] [F. 2a:] Cy co[m]mence la p[r]atique de tresex | cellent docteur [et] maistre en medeci= | ne Maistre Bernard de Go[r]don | qui sappelle fleur de lys en medecine | [Ad finem:] Et imp[r]ime a lyon lan mil. cccc.xcv. | le dernier iour daoust. | Deo gratias. |
[247] ff F°. Lugduni, 1495.
[Hain no. 7801.]
First and only edition in French in the 15th century.

*193. Gorichem, Henricus de. [circa –1460 a.d.] [Tractatus de superstitiosis.] [F. 1a:] Incipit tractatus de sup[er]sticiosis | quibusda[m] casib[us] [com]pilat[us] in alma vniue[r]sitate studij Coloniens[is] p[er] | ven[er]abilem m[a]g[ist]r[e]m Heinricu[m] de | Gorihem. *** [F. 18b:] Explicit Tractatus cui[us] sup[r]a | de Celeb[r]at[i]one festo[rum]. |
[|18] ff 4°. Esslingae, Conradus Fyner de Gerhussen, 1472.
[Hain-Copinger no. 7807.]

GORUS, JOHANNES
See—GEMINIANO, JOHANNES DE S. ORD. PRAEDIC.

*194. GRADIBUS EX FERRARIIS, JOHANNES MATTHAEUS DE. [-1472 A.D.] [Expositiones super tractatum de urinis et vigesimam secundam Fen tertii canonis Avicennae.] [F. 1 vacat. desider.] [F. 2a:] Incipiunt magist[r]i Ioannis Mathei ex ferrarijs [de gradi Expositio[n]es super tractatu[m] de vrinis [et] | vigessimamsecundam fen tercij canonis domini | Auicene: sup[er] quam nullus ante ipsum sc[r]ipsit. | [F. 39b:] Imp[r]essum Mediolani per Iacobu[m] de San | cto Nazario de Rippa a[n]no d[omi]ni. M.CCCCLXXXXIIIJ | Die. XXVI. mensis Iulij. |

[40] ff F°. Mediolani, Jacobus de S. Nazario de Ripa, 1494.
[Hain no. 7839.]

*195. GRADIBUS EX FERRARIIS, JOHANNES MATTHAEUS DE. [-1472 A.D.] [Expositiones super vigesimam secundam Fen tertii canonis Avicennae.] [F. 1a (c. sig. a. 2):] Expositiones p[ra]eclarissimi [et] subtilissimi Ma | gistri Jo. Mathei ex ferrarijs [de] gradi. sup[er] vigessi | mamsecu[n]da[m] Fen. tertij canonis. d. Auic. ad Illu | strissimum Ducem. *** [F. 103a. col. 2:] Imp[r]essum Mediolani Su[m]mo studio [et] dili | gentia per Iacobu[m] de s[an]c[t]o Nazario de la Ripa | Anno. M.CCCCXCIIIJ. die. xvij. nouemb[r]is. |

[103] ff F°. Mediolani, Jacobus de S. Nazario de Ripa, 1494.
[Hain no. 7840.]

*196. GRANOLLACHIS BARCIONENSIS, BERNARDUS. [circa 1445-1500 A.D.] [Conjunctiones et oppositiones lunae cuius libet mensis.] [F. 1a. tit.:] El Summario de la Luna. | [F. 1b fig. xyl. F. 2a (sign. a i i:] (D) Ela nobilissima (sic) arte e sie[n]- | tia de astrologia e stato tracto lo prese[n]- | te summario per lo Egregio et sapien | tissimo astrologo maistro Bernardo | de granollachs maistro in arte et i[n] me- | dicina della inclyta Cita de Barcelo | na. In lo quale summario sonne li co[n]- | iunctioni et oppositioni cioe li girame[n] | menti (sic) et le plene de la luna summato | per ciaschu[n] del mese et per ciasschun anno del anno presente che ce[n]- tano. M.CCCC.LXXXXIX. fino al a[n]no Mil- | le cinquecento et cinquanta secundo largamente e manifesto se | demostra in lo presente libro. | [F. 34a.:] Nota che le prescripte tabule dele coniunctione et oppositio | ne et dele eclypsi del sole et dela luna forono et donno calculate p[er] | la cita de Barcelona [etc. F. 34b vacat. s. l. et type. n. char. goth. mai. sign. a-d (a, c^8, d^{10}). 33-35 ll.]

34 ff 4°. [Venetiis, 1489.]
[Reichling II. no. 538.]
[*Manuscript notes in Italian.*]
[*Apparently only other copy in existence. No other copy in America.*]

*197. GRAPHEUS S. GRASSUS, BENVENUTUS. [circa 1150-1200 A.D.] [De oculis eorumque aegritudinibus et curis.] [F. 1a:] BENEVENVTI GRASSI HIE | ROSOLIMITANI DOCTORIS | CELEBERRIMI AC EXPERTIS | SIMI DE OCVLIS EORVMQVE | EGRITVDINIBVS & CVRIS FE | LICITER INCIPIT. | [Ad finem:] SEVER. FERRAR. | F F. IIII. |

[35] ff 4°. [Ferrariae], Sever[inus] Ferrar[iensis], [1474.]
[Hain no. 7869.]
First edition of the first book printed on the diseases of the eye.

*198. GRATIA DEI ESCULANUS S. ASCULANUS, ORDIN. PRAEDIC. [-1436 A.D.] Commentaria in artem veterem Aristotelis. [F. 1a tit.:] Co[m]mentaria Gratiadei esculani | Ordinis predicatorum in tota[m] ar | tem veterem Aristotelis. | [F. 2a (c. sign. a2):] § Incipiunt preclarissima co[m]mentaria Gratia dei escu | lani sacri ordinis p[re]dicatorum in p[re]dicabilia porphyrij. | [F. 72a:] § Expliciunt preclarissima Commentaria gratiadei escu | lani sacri ordinis predicatorum in totam artem veterem | Aristotelis: nec non et in predicabilia prophyrij. ac p[ri]n | cipia Gilberti porectani: correctioni [qua]m, diligentissime tra | dita p[er] venerabile[m] visum | fratre[m] theophilus cremone[n]se[n] vite | regularis eiusdem ordinis professorem. | § Impressum vero in inclita venetiarum vrbe: ma[n]dato atque i[m]pensa Nobilis viri domini octauiani scoti ciuis mo | doetiensis: in famosa officina magistri boneti de locate | lis bergome[n]sis. Olympiadibus dominicis: Anno videlicet | ab incarnatione eiusdem omnipotentis supra Millesi | mu[m] et q[ua]dringe[n] tesimu[m] vno et no[n]agesimo. Idibus septe[m]bris. | [Insign. typogr. c. litt. O S M. F. 72b tab., quae expl. f. 73b: FINIS. f. g. ch. maj. et min. c. f. 2 col. 65 l.73 ff. c. litt. initial. florent.] |

73 ff F°. Venetiis, Octavianus Scotus Modoetiensis per Bonetum Locatellum, Presbyter Bergomensis, 1491.
[Hain no. 7874.]

*199. GRUENPECK, JOSEPHUS, MED. ET ASTROLOG. [1450-1531 A.D.] [Tractatus de pestilentiali scorra sive mala de Franzos.] [F. 1a. tit.:] §Tractatus de pestilentiali Sco[r]ra siue mala de Franzos. | O[r]iginem. Remediaq[ue] eiusdem continens. co[m]pilatus a vene | rabili viro Magistro Ioseph G[r]unpeck de Burckhausen. | sup[er] Carmina quedam Sebastiani B[r]ant vtriusq[ue] iuris p[r]o | fesso[r]is. |

[12] ff il. 4°. [Augustae Vindelicorum, Johann. Froschauer, Augustens., 1496.]
[Hain no. 8091.]

*200. Gruenpeck, Josephus, Med. et Astrolog. [1450–1531 a.d.] [Tractatus de pestilentiali scorra sive mala de Franzos.] [F. 1a. tit:] Tractatus de pestilentia | li Sco[r]ra siue mala de Franczos O[r]igine[m]. Remediaq[ue] | eiusdem continens. co[m]pilatus a venerabili viro Magi = | stro Ioseph Grunpeck de Burckhausen sup[er] carmina queda[m] Sebastiani B[r]ant vtriusq[ue] iuris p[r]ofesso[r]is: | Sco[r]ra de Franssois | [F. 12a:] A M E |

[12] ff il. 4°. [Coloniae, Cornelius de Zyrickzee, circa 1497
[Hain no. 8092.]

201. Guanerius, Antonius Ticinens. Medic. [–1440 a.d.] [Opera.] [F. 1 vacat.] [F. 2a:] Incipit tractatus de egritudinibus | capitis. editus per Magistrum An | tonium Guaynerium Artiu[m] [et] medici[n]e | doctorem papiensem. | [F. 352b:] In hoc uolumine agregati sunt o[mn]es | tractatus *** studio papie[n]si et antonij de ca[r]cano o | pera papie i[m]pressa a[n]no a natali domini | i. 4. lxxx.i. *** [F. 354 desideratur.]

[354] ff F°. Papiae Antonius de Carchano, Mediolanensis, 1481.
[Hain no. 8097.]
Imperfect. ff 342–353 mutilated.

202. Guanerius, Antonius Ticineus. Medic. [–1440 a.d.] [Opera.] [F. 1a (c. sign. a):] Incipit tractatus [de] egritudinibus capitis. | editus per Magistrum antonium guay | neriu[m] artiu[m] [et] medici[n]e doctore[m] papie[n]sem. | [F. 255a:] Et sic e[st] finis hui[us] antidotarij [etc.] In hoc volumi[n]e aggregati sunt o[mn]es trac | tat[us] quos clarissim[us] et uerissim[us] medici[n]e i[n]ter | pres Antoni[us] guaineri[us] papie[n]sis ad diuersas | corporis hu[m]ani egritudines editit. et diligen | tissime eme[n]dati p[er] p[re]stantissimu[m] artiu[m] [et] medi | cine doctore[m] mag[ist]r[um] Fra[n]ciscu[m] bobie[n]sem. theo | rica[m] medicine de mane legente[m] i[n] felici studio | papie[n]si. Et aureum e[st] volume[m]. [et] iuuenibus ad | op[us] practicu[m] nouiter accede[n]tib[us] maxi[m]e vtile. | Per mag[ist]r[um] Antoniu[m] [de] carcano ip[s]ius gymna | sij generale[m]iurista[rum] bidellu[m] dilige[n]tissime Pa | pie imp[re]ssi m.cccc.lxxxviij. die. xa. Januarij. |

[255] ff F°. Papiae, Antonius de Carchano, Mediolanensis, 1488.
[Hain no. 8098.]

203. Guido de Monte Rochen. s. Rotherii. [1230–1331 a.d.] [Manipulus curatorum.] [F. 1. vacat. desider. F. 2a:] Tabula sequentis op[er]is quod Manipul[us] curatorum nu[n]cupatur | Feliciter incipit. | [F. 4a:] Incipit Feliciter doctissimi ac famosissimi viri d[omi]ni Guidonis de | monte Rocherii liber qui Manipulus curatoru[m] vulgariter appel | latur In quo p[er] necessaria officia eor[um] quib[us] cura a[n]i[m]a[rum] c[om]missa est | secundum septe[m] Sacrame[n]to[rum] breuiter p[er]tractant[ur]. | [F. 112b:] Deo gracias. |

[112] ff 4° [Basileae, Martinus Flach, circa 1475.]
[Hain no. 8166.]

*204. Guido de Monte Rochen. s. Rotherii. [1260–1331 a.d.] Manipulus curatorum. [F. 1a. tit.:] Manipulus Curatorum. | [F. 1b. vacat. F. 2a (sign. a ii.) col. 2.] Incipit Manipulus curatoru[m] com | positus a guidone de monte Roche[n]. | [F. 87b. col. 2:] Impressum Venetiis per Simone[m] | papiensem dictum Beuilaqua | m.cccclxxxxv die | xx. Dece[m]bris. | Registrum huius Operis | a b c d e f g h i k l | Omnes sunt quaterni. | [F. 88 vacat.]

[88] ff 4°. Venetiis, Simon Bivilaqua Papiensis, 1495.
[Hain no. 8211.]

Guy de Chauliac
See—Cauliaco, Guido de

205. Haly, fil. Abenragel, Albohazen. [–994 a.d.] [Liber regalis dispositio nominatus ex arabico.] [F. 6a:] Liber p[r]imus | In nomine su[m]mi dei qui cu[m] trinus sit personis vnus est. | *** [F. 191b:] Imp[r]essum venetijs. die 25. septe[m]b[r]is. 1492. op[er]a bernar | dini ricij de nouaria. i[m]pensa vero excelle[n]tissimi artiu[m] [et] medi- | cine docto[r]is d[omi]ni mag[ist]ri Ioannis d[omi]nici de nigro. ***

[192] ff F°. Venetiis, Bernardinus (Rigus) de Novaria 1492.
[Hain no. 8350.]

206. Harderwyck, Gerardus. [circa 1460–1510 a.d.] [Epitomata seu reparationes totius philosophiae naturalis.] [F. 1a. tit.:] In epitomata to | tius naturalis ph[ilosoph]ie que trito sermone rep[ar]at[i]o[n]es appellantur | Alberto centonas [con]tinentia. in bursa Lauren-

tiana flo[r]en | tissimi Agrippinensis gymnasij castigatissime edita epigra[m] | ma ad lectorem: [F. 339b:] § *** scriptis confo[r]mia per Magistru[m] gerardum herderwiccensem *** et *** Burselaurencij *** emendatissime ad vtilitatem | o[mn]i[u]m textu[m] Arestoteles [sic] intel | ligere cupie[n]tium elabo[r]ata. et per honestum viru[m] Henricum [quentel Coloniensem ciue[m] nitidissime *** Anno *** Millesimo quadringe[n]tessimo sup[er] nonagesi | mum sexto p[r]edie calendas martias *** §Telos totius operis multis retro tempo[r]ib[us] a | studentibus liberaliu[m] artium desiderati. |

3 v. in 1.340 ff 3 por. 4°. Coloniae, Henricus Quentell, Coloniensies, 1496.
[Hain no. 8362.]
First edition.

*207. Henricus de Saxonia. [-1195 A.D.] [Libellus de secretis mulierum.] [F. 1a. tit.:] Tractatus Hein | rici de Saxonia Alberti magni discipuli | de secretis mulierum. | [F. 76a:] Explicit tractatus Heinrici de Saxonia Al | berti magni disciputi de secretis mulierum Im | p[r]essus Auguste Per Anthonium So[r]g feria | sexta post Bonifacij Anno salutis Millesi- | moquad[r]ingentesimooctuagesimonono. |

[76] ff 4°. Augustae Vindelicorum, Antonius Sorg, Civis Augustensis, 1489.
[Hain no. 8434.]

*208. Hentisberus, Guilelmus. [circa 1350–1400 A.D.] [Expositio regularum solvendi sophismata.] [F. 2a (c. sig. a^2):] [ ] Egulas soluendi sophismata. *** [F. 58b. I.24:] Finis egregij hentisberi regula[rum] [et] sophismatu[m] | expo[sitio]nis p[er] eximiu[m] sophismata[m] [et] philosophu[m] su[m]mu[m] | magistru[m] gayetanu[m] de tienis emendate p[er] acutis | simu[m] artiu[m] ac medicine doctore[m]. m. Franciscum | agubiense[m] mane medicine theorica[m] papie lege[n]te[m] | su[m]ma cu[m] diligentia p[er] me andrea[m] de bonetis d[e] pa | pia venetiis i[m]presse. *** M.CCCCLXXXIIJ die. ix. d[e]ce[m]bris. Laus deo et beate virgini. | Registrum | *** FINIS. |

[58] ff F°. Venetiis, Andreas de Bonetis de Pavia, 1483.
[Hain-Copinger no. 8441.]

*209. Herbarius. [F. 1a. tit.:] Herbarius i[n]latino cu[m] figuris. [Icon. xyl. F. 2a:] ROgatu plurimoru[m] iopu[m] numoru[m] ege[n]tiu[m] ap | [F. 3a:] Capitula herba | ru[m] secu[n]du[m] ordine[m] | alphabeti [F. 5a:] Absinthiu[m] [F. 155a.:] Particula secu[n]da de sim | plicibus laxatiuis linitis. | [F. 174a:] Et | dealbat sapo carnem inde lotam valet etiam ut inde fia[n]t | suppositoria de super spergantur pulueres de esula [et] prouocabunt assellationem. |

[174] ff il. 4°. [Lovanii, Johannes Veldener, circa 1487.]
[Copinger II. 2916.]

Herbarius zu teütsche
See—Hortus sanitatis

*210. Hermes s. Mercurius Trismegistus. Pimander de potestate et sapientia dei. [F. 1a. (c. sign. a) tit.:] MERCVRII TRISMEGISTI LIBER DE POTESTA | TE ET SAPIENTIA DEI PER MARSILIVM FICI | NVM TRADVCTVS: AD COSMVM MEDICEM. | [F. 32a:] FINIS EST OPERIS ELEGANTISSIMI | MERCVRII TRISMEGISTI | Mercurii Trismegisti per Marsilium Ticinum [sic] Florentinum e | graeco in latinum Traducti Finis. | Venetiis per Damianum de Mediolano. | M.CCCCLXXXXIII. die. x. Maii. |

[32] ff 4°. Venetiis, Damianus de Mediolano, 1493.
[Hain no. 8461.]

Heydenberger
See—Ortolff von Bayriandt

211. Hippocrates. [460–370 B.C.] [Tractatus de natura hominis et alia opuscula, Andrea Brentio interprete.] [F. 1a vacat. F. 1b tab:] § Hippocrates de natura hominis. | De uictu. | *** Hippocrates iusiurandum | Hippocratis demonstratio q[ui] artes sunt. | Hippocratis inuectiua in obtrectatores medicinae | Quae quide[m] opera ut latine et eme[n]dare (sic) lege- | rentur. | Curauit Andreas Brentius Patauinus. | § Francisco Dedo Venetoru[m] oratori. | [F. 2a:] XYSTO. IIII PON. MAX. ANDREAS | BRENTIVS PATAVINVS. S. P. D. | [F. 20a in fine invectivae:] FINIS. |

[20] ff 4°. [Romae, Stephanus Plannck de Patavia, circa 1480.]
[Hain no. 8669.]

212. Hippocrates. [460–370 B.C.] [Tractatus de natura hominis et alia opuscula, Andrea Brentio interprete.] [F. 1a.] Hippocrates de natura hominis | De uictu. | De tuenda ualitudine | Medicinae lex | Hippocratis iusiurandum | Hippocratis demonstratio q[ui] | artes sunt | Hippocratis i[n]uectiua in obtrecta | tores Medicinae | Quae quidem opera ut latine et | emendate legerentur | Curavit Andreas Brentius | Patauins. | [F. 1b tetrastichon: | Francisco Dedo

Venetorum oratori. | [F. 2a:] XYSTO. IIII. PONT. MAX. ANDREAS | BRENTIVS PATAVINVS. S. P. D. | [F. 20a:] FINIS. | [F. 20b: registr.]

[20] ff 4°. [Romae, Stephanus Plannck de Patavia, circa 1490.]
[Hain no. 8670.]

213. HIPPOCRATES. [460–370 B.C.] [Libellus de esse aegrorum, Alexandro de Appellatis interprete.] [F. 1a:] Magnifico Patricio Hyeronimo | donato liberaliu[m] artiu[m] doctori excelle[n]- | tissimo. Allexander (sic) de appellatis pa- | tauus post Com. S. plurima [m] dicit. | [F. 2a.:] Prologus haly in librum ypocratis: | [10 ll. deinder]. Incipit libellus diuinus. [F. 8b:] Explicit libellus diuinus ypocratis | chii: quem dee sse egrorum secundum | diuersa disposicio[nu]m edidit. Eme- [n]da | tu[m] (sic) p[er] m[a]g[ist]r[um] Allexa[n]d[rum]de appellat[is]. | arciu[m] doctore[m]. imp[re]ssum padue.a [n]no.i 483. | [char.goth.8 ff. num. 1–5, non sign.: 32 ll. c. litt. initial xylogr.]

8 ff 4°. Patavii, [Matthaeus Cerdonis de Windischgretz] 1483.
[Reichling II no. 557.]
[*Pages from contemporary German used for side-covers.*]
[*Initial and capital letters rubricated.*]

214. HIPPOCRATES. [460–370 B.C.] [Libellus de medicorum astrologia.] [F. 45b:] Hyppocratis libellus de medico[r]u[m] astrologia incipit: | a Petro de abbano in latinu[m] traductus. | [F. 49a:] Hyppocratis libellus de medico[r]u[m] | astrologia finit: a Petro de abbano | in latinu[m] traduct[us] Imp- [r]essus est arte ac diligentia mira Erhardi Rat- | dolt de Augusta Imperante inclyto Johanne Mocenico duce Ueneto[r]u[m]: Anno salutifere incarnationis. 1485. | Uenetijs |

[In- Prognosticon de mutatione aeris. *** 1485. ff 45b–49a.]

*215. HISPANUS, PETRUS, POSTEA JOHANNES XXI. PAPA. [–1277 A.D.] [Practica medicinae, quae thesaurus pauperum nuncupatur.] [F. 1a:] § Qui in comincia illibro chiamato thesoro de poueri | compilato et facto per maestro piero spano. | [Icon. xyl.] In nomine sancte e indiuidue trinitatis laquale | *** [F. 2a. c. sign. a². post l. 6:] De capelli che caggione C. primo | Fa lisciua della cenere dello sterco del colombo [e] lauane ilcapo. | *** [F. 93b:] Questa e latauola de capitoli della ricepte leq[ue]l sico[n] | te[n]gono i[n] q[ue]sto libro chiamato thesoro d[e] poueri. | [Tabula expl. f. 94b.]

[94] ff 1 woodcut. 4°. [Florentiae, Bartholomeo di Francesco de'Libri, Fiorentino, circa 1490.]
[Hain no. 8714.]

*216. HISPANUS, PETRUS, POSTEA JOHANNES XXI. [circa –1277 A.D.] PAPA. [Practica medicinae, quae thesaurus pauperum nuncupatur.] [F. 1 vacat.] [F. 2a:] QVI IN COMINCIA IL LIBRO CHIAMATO | TESORO DE POVERI COMPILATO | ET FACTO PER MAESTRO | PIERO SPANO. | *** [F. 70b:] Stampata in Venecia per Gioan ragazzo & Gioan | maria Compagni. del. M.CCCCLXXXXIIII. | a di XXVII. Marzo. Laus Deo. | ***

[70] ff 4°. Venetiis, Johannes de Ragazo de Monteferrato et Johannes Maria [de Occimiano], 1494.
[Hain no. 8715.]
Imperfect. f a1 title-page, missing. First dated Italian edition.

217. [HORTUS SANITATIS.] [F. 1a. tit.:] Ortus Sanitatis | De herbis et plantis. | De Animalibus [et] reptilibus | De Auibus et volatilibus | De Piscibus [et] natatilibus | De Lapidibus [et] in terre venis nasce[n] (tibus | De Urinis et ea[rum] speciebus | Tabula medicinalis Cum directo | rio generali per omnes tractatus. | [F. 342b:] Hec Auicenna: Edidius: Isaac [et]c. Et hec de v[r]i nis dicta sufficiant. Finis. |[f. 343*a*-f. 360a. Tabulae.] |

[360] ff il. 3 pl. F°. [Argentorati, Johannes Pryss, circa 1490.]
[Hain no. 8941.]
Imperfect. ff 10 & 333 missing.

218. [HORTUS SANITATIS.] [F. 1a:] Ortus Sanitatis | De herbis et plantis | De animalibus [et] reptilibus | De Auibus et volatilibus | De piscibus [et] natatilibus | De Lapidibus [et] in terre uenis nasce[n] | (tibus | De Urinis et ea[rum] speciebus | Tabula medicinalis Cum directo | rio generali per omnes tractatus. | [F. 342b:] Hec Auicenna. Egidius. Isaac. [et]c. Et hec de | v[r]inis dicta sufficiant. §Finis. |

[360] ff il. F°. [Argentorati, Johannes Pryss, circa 1498].
[Hain no. 8943.]
Imperfect. Part of title supplied by band. ff 188, 208 & 333 missing.

219. [HORTUS SANITATIS.] [F. 1a tit.:] Ortus sanitatis. | [F. 1b icon. xyl. F. 2a (c. sign. A i j):] (O)Mnipo | te[n]tis eter | niq[ue] dei. | toci[us] (sic) nature cre | atoris opera. *** [Expl. f. 422a. col. 2. l. 47.:] hec de vrinis dicta sufficiant. | [F. 422b. icon. xyl. F. 423a (c. sign. A j)—453a tabb. F. 453b post epilogum, in quo Jac. Meydenbach libri

impressor nominatur:] Impressum est autem hoc i[m]p[ressu]m in inclita | ciuitate Moguntina. *** Anno salutis Millesimo Quadringente | simo Nonagesimo primo. Die vero Io | uis viscesima tercia (sic) mensis Junij. |

[453] ff il. 6 pl. 4°. Moguntiae, Jacobus Meydenbach, Moguntinus, 1491.
[Hain-Copinger no. 8944.]
Perfect copy of tbis rare edition witb last blank containing MS. index by a contemporary band.

220. [HORTUS SANITATIS.] [F. 1a. tit.:] Herbarius zu teut | sche vnd von aller handt kreüteren. | [F. 261b:] §Ged[r]uckt vnd saligklich vol- | lendet dyser Herbarius [d]urch| Hannsen Sc hönsperger in der | Keyserlichen stat Augspurg an | dem afftermontag nach Tybur | cji. Nach Cristi geburt tausent |vierhundert vnnd in dem d[r]eü | und neuntzigsten jare. |

[261] ff F°. Augustae Vindelicorum, Johannes Schönsperger Augustensis, 1493.
[Hain no. 8954.]

HRABANUS MAURUS
See—RABANUS MAURUS, MAGNENTINUS, ABBAS FULD. ARCHIEPISC. MOGUNT.

HUGO DE S. VICTORE, ORDIN. FREMIT S. AUGUST. DIDASCALION
In—BRACK, WENCESLAUS VOCABULARIUM, circa 1486. ff lvi–LXXVII. |

*221. HUGO SENENSIS S. HUGO BENTIUS. [–1439 A.D.] Consilia medica. [F. 1a insign. c. litt. FNB. deinde mai. typ.:] Aurea ad omnesq[ue] egritudi[n]es | Clarissimi vgonis Senen | sis saluberrima Co[n]silia ad | ditis multis prius i[m]pres | sis eiusde[m] vgonis nu | per inue[n]tis no[n]nul | lisq[ue] aliis utilissi | mis co[n]siliis | feliciter | incipi | unt. | ✠ | [F. 69b. col. 2:] § Impressa Papie expensis egregij Uiri. d. Francisci de | nebijs de burgo francho. 18. k[a]l[endas] Maias Regna[n]te i[n]uictissimo | Principe Ludiuico (sic) Maria Sfortia. | [deinde:] § Cu[m] priuilegio ne quis audeat hoc op[us] i[m]primere citra a[n]nos | decem sub pena in eo [con]tenta | [tum:] Registrum. | §Omnes sunt terni preter I que est duernus. | [F. 70a. col. 1:] Registrum consiliorum famo | sissimi artiu[m] [et] medicine doctoris. M. vgonis. Bentij. Se- | nensis incipit. | [col. 2 infra:] Finis. | [F. 70b vacat.]

[70] ff F°. Papiae, [Leonardus de Gerlis, 1498.]
[Reichling no. 1544.]
Only one otber copy in America.

*222. HUGO SENENSIS S. HUGO BENTIUS. [–1439 A.D.] [Super aphorismos Hippocratis et super commentum Galeni.] [F. 1a. tit.:] Expositio Ugonis Senensis super apho- | rismos Hypocratis [et] super co[m]mentum | Galieni eius interp[r]etis. | [F. 159b:] §Uenetijs imp[r]essu[m] ma[n]dato [et] sumptibus Nobilis vi- | ri domini Octauiani Scoti Ciuis Modoetiensis. Deci[m]o | kalendas Junias. i498. per Bonetum Locatellum Ber | gomensem. |

[160] ff F°. Venetiis, Octavianus Scotus Modoetiensis per Bonetum Locatellum, Presbyter. Bergomensis, 1498.
[Hain no. 9012.]

*223. HUGO SENENSIS S. HUGO BENTIUS. [–1439 A.D.] [Expositio in libros tegni Galeni.] [F. 1a:] Expositio Ugonis Senensis super lib[r]os tegni Galieni. | [F. 2a:] § Incipit expositio Clarissimi vir Ugonis sene[n]sis super | lib[r]os tegni Galieni. | [F. 93b:] Opus imp[r]essum venetiis: mandato et sumptibus Nobilis | viri Domini Octauiani Scoti Ciuis Modoetiensis. Un | decimo kalendas Julias. i498.per Bonetum Loca | tellum Bergomensem. |Registrum | *** Finis. | [Insign. typ.] O.S.M.

[93] ff F°. Venetiis, Octavianus Scotus Modoetiensis per Bonetum Locatellum, Presbyter. Bergomensis, 1498. [Hain no. 9015.]

*224. HUGO SENENSIS S. HUGO BENTIUS. [–1439 A.D.] [Expositio super primo canonis Avicennae.] [F. 1a. tit.:] Expositio Ugonis Senensis | super p[r]imo Canonis Aui | cenne cum questioni | bus eiusdem. | [F. 124b:] § Opus imp[r]essum Uenetijs mandato et expe[n]sis nobilis | [Uiri D[omi]ni Octauiani Scoti Ciuis Modoetie[n]sis Qui[n]to kalendas Maias i498. Per Bonetum Locatellum | Bergomensem. | Finis. | [F. 125a:] Registrum. | Finis | [Insign.typ.] O.S.M.

[125] ff F°. Venetiis, Octavianus Scotus Modoetiensis per Bonetum Locatellum, Presbyter. Bergomensis, 1498.
[Hain no. 9017.]

*225. HUGO SENENSIS S. HUGO BENTIUS. [–1439 A.D.] [Tractato utilissimo circa la conservazione della sanitade.] [F. 1 (c. sig.a):] Tractato utilissi[m]o circa la [conser]uat[i]o[n]e [de] la sa[n]ita[de] [com]posto p[er] il cla- [r]i[ssimo] [et] | excelle[n]ti philosofo [et] doctore di medici[n]a Me[ss] Ugo Be[n]zo. [F. 52a (c.sig.g4):] Exactum est hoc opus M[edio]l[an]i | cu[r]a et diligentia Petri de co[r] | neno Mediolane[n]sis. 1481. p[r]i | die calendas Junias. *** [F. 52b–54a: registrum.]

[54] ff 4°. Mediolani, Petrus de Cornerio, 1481.
[Hain no. 9021.]

226. [Institoris, Henricus, Ordin. Praedic.] [circa 1450–1500 A.D.] Malleus maleficarum. [F. 1a tit.:] Malleus maleficaru[m]. | [F. 2a (c. sign. a ij):] Appologia auctoris in malleu[m] maleficaru[m]. | [F. 3a (c. sign. aiij):] Tenor bulle apostolice aduer | sus heres[i]m maleficarum cum approbat[i]one [et] subscript[i]one doctorum| alme universitatis Colonien[sis]. in sequente[m] tractatu[m]. Incipit feliciter. | [Expl. f. 6b. F. 7a (c. sign. b):] (S)Uper bulla[m] | ergo Innocentij octaui ad = | [etc.] [F. 190a. col. 1.:] Sit laus deo exterminiu[m] | heresis. pax viuis. requies | eterna defunctis. Amen. |

[190] ff 4°. Spirae, Petrus Drach, Spirensis, 1492.
[Hain no. 9240.]

*227. [Instructiones Confessorum.] [F. 1a (c. sign. a. j.):] () Impliciores et minus expertos con | fessores de modo audiendi c[on]fessio[n]es | [etc.] [F. 40b:] Explicit tractatus de instructionibus | confessorum foeliciter. |

[40] ff 4°. [Magdeburgi, Albertus Rauenstein et Ioachimus Westval, 1483.]
[Hain no. 9248.]

*228. Isaac, Beimiram, Medic. [855–955 A.D.] [Tractatus de particularibus diaetis.] [F. 2a:] Eximij Isaac medicine monarce: de p[ar] | ticularibus dietis libell[us]. *** [F. 59a:] Hic tractatulo de particularibus dietis: excellentissimi | medici Ysaac modus imponitur: cura solerti padue im- | p[r]essus: per magistru[m] Mattheum Cerdonis de win- | dischgretz. die. 23. Marcij. 1487. |

[59] ff 4°. Patavii, Matthaeus Cerdonis de Windischgraez, 1487.
[Hain no. 9267.]
First edition of the first book on diet.

Isaac Judaeus
See—Isaac, Beimiran, Medic.

Isidorus. Episcop. Hispalensis. Etymologiarum.
[In—Brack, W. Vocabularium. *** 1487. ff. 61b–69a.]

Isidorus Episcop. Hispalensis. Etymologialogiarum.
[In—Brack, Wenceslaus. Vocabularium. *** 1486. ff. xxxi–xxxix.]

*229. Isidorus Episcop. Hispalensis. [circa 570–636 A.D.] [Etymologiarum libb. xx.] [F. 1a. tit.:] Isidorus ethimologiarum | Idem de summo bono. | [F. 99a. col. 2:] §Finit liber tertius [et] vltimus de summo bono sancti Isi- | do[r]i hyspalensis ep[iscop]i: Imp[r]essus Uenetijs p[er] Bonetum | loca- | tellu[m] mandato [et] expensis Nobilis viri Octauiani Scoti |Ciuis. Modoetiensis. MCCCCXCIII. | Tertio Idus Decemb[r]is Cu[m] dei summa laude. |

[100] ff F°. Venetiis, Octavianus Scotus Modoetiensis per Bonetum Locatellum, Presbyter. Bergomensis, 1493.
[Hain no. 9280.]

Jacobus Forliviensis
See—Forlivio s. Foroliviensis, Jacobus de

Jahiah Ben Serabi

Jacques Le Grand. See—Magni, Jacobus
See—Serapionis Johannes fil.

*230. Jamblichus. [circa 309–329 A.D.] [De mysteriis Aegyptiorum, Chaldaeorum, Assyriorum, et alia opuscula.] [F. 1a tit.:] Index eorum, quae hoc in libro habentur. | Iamblichus de mysteriis Aegyptiorum. Chaldaeorum. | Assyriorum. | Proclus in Platonicum alcibiadem de anima. atq[ue] | daemone. | Proclus de sacrificio et magia. | Porphyrius de diuinis atq[ue] daemonibus. | Synesius Platonicus de somniis. | Psellus de daemonibus. | Expositio Prisciani et Marsilii in Theophrastu[m] de sen | su. phantasia et intellectu. | Alcinoi Platonici philosophi liber de doctri[n]a Platonis. | Speusippi Platonis discipuli liber de platonis difiniti- | onibus. | Pythagorae philosophi aurea uerba. | Symbola Pithagorae philosophi. | Xenocratis philosophi platonici liber de morte. | Marsilii ficini liber de uoluptate. | [F. 184b.:] Marsilii Ficini Florentini De Voluptate Liber absolutus est. Figini. | iii. Kalendas Ianuarias. MCCCCLVII. anno aetatis suae. XXIIII. | Venetiis mense Septembri. M. III D. In aedibus Aldi. | Nequis hunc librum queat imprimere, concessum est, ab ill. S. V. | F. 185a.] REGISTRUM. |

[185] ff F°. Venetis, Aldus (Pius) Manutius, 1497.
[Hain no. 9358.]

Januensis, Simon
See—Simon Genuensis

Johannes Gaddesden
See—Anglicus de Gatisden, Johannes

Johannes Gerson
See—Gerson, Johannes Cancellar. Paris.

*231. Johannes Mercurius. Contra pestem. [–129 A.D.] [F. 1a. c. sig. A.] § Contra Pestem: ac contra omnem ipsius epidimie perniciosissimam | contagionem: Preconium insigne: ex officinulla Johannis | Mercurij Corrigiensis affectuosissime excusu[m]. Qui

aut[em] | fur et iniquus est: temerario i[m]petu absq[ue] vlla auctoris | licentia hoc idem Imprimere faciet: Pesti | lentia enim repentino et vlciscenti | furore vo[r]abit eum. [F. 4a. in fine:] bene | dictio omnis. Amen. | FINIS. |

[4] ff 4°. [Romae, Johannes Besicken, circa 1493.]
Probably the only copy known of this treatise on plague. Unknown to Hain, Copinger, Burger, Reichling, Chevalier.

*232. JOHANNES PEACHAMUS S. PITHSANUS, EPISC. CANTUARIENSIS. [circa 1230–1292 A.D.] [Prospectiva communis.] [F. 1a. vacat.] [F. 1b:] Reuerendissimo in Christo patri apostolicoq[ue] p[r]otonota- | rio nec no[n] equiti aurato [et] comiti palatino Amb[r]osio grif | fo artiu[m] medici[n]eq[ue] docto[r]i p[rae]sta[n]tissimo ac theologo p[er]itissi[m]o | Facius Cardanus. s. d. p. [F. 2a:] P[r]ospectiua co[mmun]is. d. Joha[n]nis archiepiscopi Ca[n]tuarie[n]sis | fratris o[r]dinis mino[rum] *** [F. 30b. l. 28:] Optima que fertur uisus pars optima lecto[r]. | Faustis Co[r]neni clauditur auspitijs. | ***

[30] ff il. F°. [Mediolani, Petrus de Cornerio, circa 1480.]
[Hain no. 9425.]

*233. JUNG, AMBROSIUS, PHYSIC. AUGUST. [–1559 A.D.] [Tractatus perutilis de pestilentia ex diversis auctoribus congregatus.] [F. 1a. tit.:] Tractatulus perutilis de pe | stilentia ex diuersis auctoribus aggregatus Ab exi- | mio arciu[m] [et] medicina[rum] docto[r]i. Amb[r]osio jung *** [F. 18b:] Imp[r]essum Auguste p[er] Johan[n]em schön | sperger Anno d[omi]ni Millesimo q[ua]d[r]ingete- | simo nonagesimo quarto. Feria quinta | post Elisabeth.

[18] ff il. 4°. Augustae Vindelicorum, Johannes Schönsperger, Augustensis, 1494.
[Hain no. 9472.]

*234. JUNG, AMBROSIUS, PHYSIC. AUGUST. [–1559 A.D.] [Tractatus perutilis de pestilentia ex diversis auctoribus congregatus.] [F. 1a. tit.:] Ein auszerwelt loblich tractat | v[o]n regiment in dem schwären zeit der pestilentz ausz | gezogen ausz den bewärttn v[o]n weysisten alten gsch | rifften der artzney. Durch Ambrosium jung der sibe[n] | freyen künst v[o]n der artzney doctor. [die] zeit der wirdige[n] | herrn vom thüm zu Augspurg geschworner doctor. | [Icon. zyl. F. 1b. praefatiuncula. F. 2a. c. sign. Aij:] §Die auszteylung dysz tractats | [etc.] [F. 18a.] Hie endet sich diser tractat des regiments | der pestilentz. Gedruckt und volendet zu | Augspurg Durch Hannsen Schönsper | ger am freytag nach Martini. nach Cristi | geburt. M.CCCC. und JM. XCIIIJ. iar. |

[18] ff il. 4°. Augustae Vindelicorum, Johannes Schönsperger, Augustensis, 1494.
[Hain no. 9473.]

*235. KAMINTUS, EPISC. ARUSIENSIS. [circa –1462 A.D.] [Regimen contra pestilentiam.] [F. 1a. tit.:] Regimen contra pestilentia[m] | siue Epidimia[m] Reuerendissimi domini Kamiuti (sic) Episcopi | Arusiensis Ciuitatis regni dacie artis medicine expertissi | mi p[r]ofesso[r]is | §Regimen sanitatis per circulum anni valde vtile. | [F. 5a:] Incipit regimen sanitatis | per circulum anni valde vtile. | ***

[6] ff il. 4°. [Moguntiae, Jacobus Meydenbach, circa 1490.]
[Not in Hain.]

*236. KAMINTUS, EPISC. ARUSIENSIS. [circa –1462 A.D.] [Regimen contra pestilentiam.] [F. 1a:] Regimen contra epidimiam siue pestem. | [F. 4b:] Tractat[us] de regimi[n]e pestile[n]tico d[o]m[ini] kami[n]ti ep[iscop]i Arusin[ensis] ci | uitatis regni dacie artis medicine expertissimi p[ro] fessoris | finem habet. |

[4] ff 4°. [Coloniae, Johannes Guldenschaff, circa 1490.
[Reichling no. 957.]

*237. KAMINTUS, EPISC. ARUSIENSIS. [circa –1462. A.D.] [Regimen contra pestilentiam.] [F. 1a. tit.:] Regimen contra pestilentiam. | siue Epidimia[m] Reuerendissimi domini Kaminti Episcopi | Arusiensis Ciuitatis regni dacie artis medicine expertissi | mi p[r]ofesso[r]is | Regimen sanitatis per circulum anni valde utile. | [F. 6a:] Fundamenta ruunt modicum tunc durat idipsum. |

[6] ff 4°. [Moguntiae, Jacobus Meydenbach, circa 1495.
[Reichling no. 582.]

KAMITUS
  See—KAMINTUS, EPISC. ARUSIENSIS
KANUTUS
  See—KAMINTUS, EPISC. ARUSIENSIS
KAUB, JOH.
  See—HORTUS SANITATIS.

*238. KETHAM, JOHANNES DE. [1410–1480 A.D.] [Fasciculus medicinae.] [F. 1a. tit.:] Fasciculus medicine in quo | continentur: videlicet. | *** [F. 40b:] §Hec Anothomia fuit emendata ab eximio ar | tium *** §Imp[r]essu[m] Uenetijs per Jo | anne[m] [et] G[r]ego[r]iu[m] de G[r]ego[r]ijs fratres. An | no d[omi]ni. M.CCCC.XCV. die. XV. octob[r]is. |

[40] ff il. F°. Venetiis, Joannes et Gregorius de Gregoriis de Forlivio, 1495.
[Hain no. 9775.]

239. Lacepiera, Petro. [circa 1322–1390 A.D.] Liber de oculo morali. [F. 1a. tit.:] Liber de oculo morali. | [Icon. xyl. F. 1b:] Magnificis ac dilectissimis auditoribus meis in | ecclesia diui Pauli presenti anno meis sermoni- | bus assistentibus mino[ribus] minimus frater Domini | -cus ponzonus salutem in domino Jesu. | [F. 2a:] § Incipit Liber de oculo | morali. Proemium. | [F. 64b. in fine:] Explicit Liber de oculo morali: editus ab eximio sacra- | rum litteraru[m] professore magistro P. Lacepiera [etc]. summa | cum dilige[n]tia reuisus: atq[ue] omni menda detersus: Impres- | sus Venetiis per Joanne[m] hertzog alemanu[m] Anno christia | nissime natiuitatis post millesimu[m] quaterq[ue] centesimu[m] no- | nagesimosexto. Kalendas Aprilis. |

[64] ff 4°. Venetiis, Johannes Hamman de Landovia, dictus Hertzog, 1496.
[Hain no. 9804.]

*240. Lactantius, Lucius Coelius Firmianus. [circa 350–400 A.D.] [Opera.] [F. 1a:] Lactantii Firmiani de diuinis institutionibus | aduersus gentes. Rubricae primi libri incipiu[n]t. [Tab. expl. f. 9b.] [F. 10a:] Lactantii Firmiani errata primi libri q[ui]bus ipse | deceptus est per fratrem Antonium Raudensem | theologum collecta & exarata sunt. | [F. 11b in fine errator.:] His carminibus: frater Adam genuensis increpat fr[atr]em Antoniu[m] | Hic male corripuit stolidis Antonius ausis | [etc.] [F. 12a incipit lib. divinarum institutionum s. inscr.:] (M)Agno & excellenti ingenio uiri cu[m] sese doctrinae | [etc.] [F. 218b in fine:] Arguit hic hominum sectas lactantius omnes | [etc.] Post regina premit quippe colenda maris. | M.CCCC.LXXI. Adam. |

[218] ff F°. [Venetiis], Adam [de Ambergau], 1471.
[Hain no. 9809.]

241. Lactantius, Lucius Coelius Firmianus. [circa 350–400 A.D.] [Opera.] [F. 1a (c. sign. A):] Lactantii Firmiani De diuinis institutionibus aduersus gentes. Rubricae primi li | bri incipiunt. | [Tabb. expl. f. 6a. F. 7a in fine errator.:] Finis huius tabulae. | [F. 8a tit.:] Lactantii Firmiani De diuinis institutionibus | Libri septem: De Ira dei: Et Opificio | ho[min]is cum Epithomon eiusde[m] | Foeliciter Incipiunt. | [F. 9a:] L. COELII LACTANTII FIRMIANI DIVINARVM INSTITVTIO- | NVM ADVERSVS GENTES DE FALSA RELIGIONE. *** | [F. 138a:] Impressum Venetiis per Vincentium benalium. Anno incarnationis dimini. (sic) | M.CCCC.LXXXXIII. Vigesimosecundo mensis Marcii. |

[138] ff 4°. Venetiis, Vincentius Benalius, 1493.
[Hain-Copinger no. 9816.]
[Roman type with quotations in original Greek. Only four books known to have been printed at this press, of which only two are in Roman type.]

Largelata
See—Argellata, Petrus de
Le Grand, Jacques
See—Magni, Jacobus

*242. Leonicenus, Nicolaus. [1428–1524 A.D.] [De morbo Gallico.] [F. 1a. tit.:] Libellus de Epidemia, quam | uulgo morbum Galli | cum uocant. | [F. 28a:] Venetiis, In domo Aldi Manutii. Men- | se Iunio. M.iii.D. |

[29] ff 4°. Venetiis, Aldus (Pius) Manutius, 1497.
[Hain no. 10019.]

*243. Leonicenus, Nicolaus. [1428–1524 A.D. [De morbo Gallico.] [F. 1a. tit.:] Libellus de Epidimia quam | uulgo morbum Galli | cum uocant siue | brossulas. | [F. 32a:] Liber de epidemia siue brossulas finis. Impressum Medio | lani p[er] magistrum Guilielmum signerre Rothomagensem: | regnante Illustrissimo principe. d. Ludouico duce Mediola | ni. Impensa magistri Ioa[n]nis de Legnano, M.CCCCLXXXXVIJ | die. iiij. mensis Iullij. |

[32] ff 4°. Mediolani, Johannes Legnanus per Guillermum de Signerre, Rothomagiensis, 1497.
[Hain no. 10020.]

*244. Leonicenus, Nicolaus. [1428–1524 A.D.] [De Plinii et aliorum in medicina erroribus.] [F. 1a (c. sign. a):] Angelus politianus. Nicolao leonice- | no sal. d. [etc.] [Desinit haec ep.:] Vale. Flore[n]tie die. iij Ianuarij. MCCCC.LXXXXJ. [F. 18a:] Plinij ac plurium alio[rum] auctorum qui de simplicibus medica | minibus scripseru[n]t. Errores notati ab Excellentissimo artiu[m] | [et] medicine doctore. d. magistro Nicolao leoniceno vice[n]tino. | Impressi Ferrarie per magistru[m] Laurentium de valentia [et] Andream de castronouo socios. die. XVIIJ. Decembris. | anno domini. 1492. |

[18] ff 4°. Ferrariae, Laurentius de Rubeis, (Rossi) de Valentia et Andreas de Castro Novo, 1492.
[Hain no. 10021.]

*245. Leupoldus, Dux Austriae. [circa 1150–1200 A.D.] [Compilatio de astrorum scientia.] [F. 1a. tit.:] Compilatio Leuipoldi ducatus | Austrie filij de astrorum scientia | Decem continens tractatus. | [F. 2a. sphaera mundi. F. 2b:] Reuerendissimo in christo patri et d[omi]no Udalrico de fronsperg pontifici | tredentino Erhardus Ratdolt Augusten[sis]. imp[re]ssor Salute[m]. p. dicit. [F. 3a. (c. sign. a3):] § Incipit co[m]pilatio Leupoldi ducatus Austrie filij de astro[rum] scie[n]tia. | [F. 109a:] Compilatio Leupoldi ducatus Au- | strie filij de astrorum scientia: explicit | feliciter. Erhardi ratdolt Augusten[sis]. | viri solertis: eximia industria [et] mira | imprimendi arte: qua nup[er] venecijs | nunc auguste vindelicorum excellit | nominatissimus. Quinto ydus Ia | nuarij. M.CCCC.-LXXXIX currente. | Laus deo. |

[110] ff 4°. Augustae Vindelicorum, Erhardus Ratdolt, Augustensis, 1489.
[Hain-Copinger no. 10042.]
First Edition.

Liber De Formatione Hominis.
See—Albertus Magnus
Liber servitor
See—Albucasis

*246. Lotharius Diaconus Cardinalis, postea Innocentius III. Papa. [1198–1216 A.D.] Liber de miseria humanae conditionis seu de contemptu mundi. [F. 1a vacat. F. 1b:] Prima pars principalis habet. XXXI. capitula. | [F. 2a:] Incipit liber de miseria conditionis hu[m]ane editus a lothario | dyacono. cardinali sancto[rum] Sergi et bachi. qui postea Inno | cencius tercius papa appellat[us] est. Et diuisus est in tres par | tes principales et eorundem capitula Prologus. | [F. 28b:] Explicit tractatulus Innocencij pape de mise | ria conditionis humane nature per me fridericum Creu[ss]ner ciuem Nurmbergensem Sub] anno domini. M.CCCC.LXXVIJ°. |

[28] ff F°. Norimbergae, Fridericus Creusner, 1477.
[Hain no. 10216.]
Only one other copy in America.

*247. Lucha, Matthaeus de. [De diebus criticis.] [F. 1a vacat.] [F. 1b:] Ad Lectorem. | *** [F. 2a:] §Artiu[m] & medicine doctoris magistri Mat | thei de Lucha de diebus creticis Dialogus. | [F. 8b:] §Impressum Rome. MCCCCLXXXXIII. Beatis | simo Alexandro sexto imperante quem de | us conseruet. |

[8] ff 4°. Romae, [Andreas Fritag], 1493.
[Hain no. 10257.]

248. Lucianus Samosatensis. [120–180 A.D.] [Dialogus.] [F. 20a. l. 26:] LVCIANI PHILOSOPHI GRAECI DIALOGVS DE VIR | tute, conquere[n]te cum Mercurio. a Carolo aretino graeco in latinu[m] traductus. |

[In- Censorinus. De die natali. *** 1497. f 20.]

*249. Lucretius Carus, Titus [circa 98–55 B.C.] De rerum natura. [F. 1. vacat. F. 2a. c. sign. aII:] T. Lucreti Cari. poetae philosophici antiquissimi | de rerum natura liber primus incipit foeliciter. | [F. 95a. l. 10:] Paulus hunc impressit fridenperger in uerona. | *** Ab incarnatione christi: MCCCCLXXXV. | Die uigesimo octauo septembris calen. octobris. | *** Finis. |

[96] ff 4°. Veronae, Paulus Fridberger, Pataviensis, 1486.
[Hain no. 10282.]
Second issue of this work, but the first dated edition. Only work from this press.

250. Ludovicus Pruthenus s. de Prussia. [Trilogium animae.] [F. 1a. tit:] Trilogium anime | non solum religiosis veru[m]etia[m] se | cularibus p[r]edicato[r]ibus co[n]fes so[r]ibus contemplantibus et stu | dentibus lume[n] intellectus et ar | dorem affectus amministrans. | [Ad finem:] §Post hoc in imp[er]iali ciuitate Nurmberg ad p[r]eces fratru[m] mino[rum] ibide[m] co[m]mo[r]antiu[m]: p[er] Anthoniu[m] kober- | ger ad laude[m] dei imp[r]essum [et] ad hu[n]c vsq[ue] fine[m] feliciter | p[er]ductu[m] Anno d[omi]ni. MCCCC.XCVIIJ.VJ. die Marcij. |

[354] ff il. 1 woodcut 4°. Norimbergae, Antonius Koburger s. Koberger, Norimbergensis, 1498.
[Hain no. 10315.]

251. [Lumen animae seu liber mortalitatum.] [F. 1a:] §Liber moralitatum elegantissimus magnarum rerum naturaliu[m] | Lumen anime dictus. cum septem apparitoribus. necno[n] sancto[rum] docto[rum] o[r]thodoxe fidei [pro]fessorum. Poetarum etiam ac orato[rum] auctori | tatib[us]. p[er] mo[dum] pharatre |secundu[m] o[r]dine[m] alphabeti collectis. Felicit[er] incipit. | [F. 2a. Tabula. F. 32b.] Tabula moralitatu[m] Secunda super Lume[n] anime finit feliciter. | [F. 33a:] Prologus. | [F. 34b:] Titvlvs Primus | [F. 268a. In fine:] §Liber lumen anime dictus feliciter explicit. *** Annoq[ue] a natiuitate d[omi]ni. Milesimoquadringentesimo sep | tuagesimo nono quarta feria post vdalrici. su[m]ma cu[m] dilige[n]tia [com]ple[tus].|

[268] ff F°. [Reutlingae, Michael Gryff], 1479.
[Hain-Copinger no. 10331.]

*252. Macer Floridus. [De viribus herbarum.] [F. 1a:] Incipit libellus Macri de viribus | herbarum. Et p[r]imo de arthemisia.

| [Ad finem:] Herbarum varias qui vis cognoscere vires | Macer adest disce: quo duce doctus eris. |

[43] ff il. 4°. [Lugduni, circa 1491.]
[Hain no. 10419.]

*253. Magister de Magistris, Johannes. [Quaestiones super tota philosophia naturali.] [F. 1a vacat. F. 2a (c. sign. a2):] Primo | Incipiu[n]t questiones perutiles super tota phi[losophi]a | magistri Joa[n]nis Mag[ist]ri doctoris parisie[n]sis | cum explanatio[n]e textus Aristotelis secun- | dum mente[m] doctoris subtilis Scoti. | [F. 162a. in fine.] Questiones p[er]utiles sup[er] tota phi[losophi]a na[tura]li ma | gistri Joa[n]nis de Magistris doctoris parisie[n]sis | cu[m] explanatio[n]e textus Aristotelis s[ecundu]m me[n]te[m] do | ctoris subtilis Scoti. | feliciter finiunt. | Impressu[m] Parme anno d[omi]nici natalis. 1481. die | v[er]o xija. mensis Decembris. | [Ead. pag. col. 2. registri. F. 162b–163a tab. in cujus fine.] Finis. |

[163] ff F°. Parmae, [Damianus de Moyllis], 1481.
[Hain no. 10447.]

254. Magni de Parisiis, Jacobus, Ordin. Eremitar. S. August. [1350–1422 a.d.] [Zophilogium s. sophologium.] [F. 1a:] Capitula tractat[us] p[ri]mi. libri p[ri]mi Incipiunt. | [Tab. expl. f. 3a. F. 3b:] (I)Llustrissimi principis regis francorum | deuotissimo confessori domino Michae | li diuina prouidencia seu prouide[n]te gra | cia episcopo Antisyodorensi. humilis sui | [etc. F. 217b:] Zophilogium editum a fratre Iacobo magni de Pari | sius: ordinis heremita[rum] sancti Augu. finit foeliciter. |

[217] ff F°. [Argentorati, R singulare, circa 1470.]
[Hain no. 10472.]

*255. Magni de Parisiis, Jacobus, Ordin. Eremitar. S. August. [1350–1422 a.d.] [Zophilogium s. sophologium.] [F. 1a. tit.:] Sophologium sapie[n]tie magistri Jacobi magni. [seq. insign. typ. c. 4 versibus. F. 2a icon. xyl.] Doctissimi *** Jacobi magni *** sophologium incipit. | *** [F. 141b. col. 2. l. 19:] Jacobi magni sophologiu[m] sapien- | tie finit feliciter. | [F. 142–143. tabula. F. 144b. insig. typogr.] JEHAN RICHART. ***

[144] ff 4°. [Parisiis, Johannes Richart per Felix Balligaut, 1498.]
[Copinger no. 3748.]

*256. Magninus Mediol. [circa 1280–1350 a.d.] [Regimen sanitatis.] [F. 1a. tit.:] [R]Egime[n] sanitatis Magnini medio | lanensis medici famosissimi attre | bacensi episcopo directum. *** [F. 128a:] Explicit. |

[130] ff 4°. [Lugduni, circa 1495.]
[Hain no. 10482.]

*257. Maimonides, R. Moses. [1135–1204 a.d.] [Aphorismi medici.] [F. 1a:] §Incipiunt aphorismi excellentissimi Raby Moyses se | cundum doctrinam Galieni medicorum principis. | [F. 133b:] Bononie i[m]pressum impensa Benedicti Hectoris librarii: Ope | ra uero Platonis diligentissimi impressoris Bononiensium. | Anno gratie. m.cccc.lxxxviiii. quarto calendas Iunii. | *** [F. 135a:] Amphorismi (sic) Iohannis damasceni. | *** [F. 153–156 desideratur.] [F. 158a:] §Finis. | §Laus deo. |

[158] ff 4°. Bononiae, Benedictus Hectoris, Bononiensis, per Platonem de Benedictis, Bononiensis, 1489.
[Hain no. 10524.]

*258. Maimonides, R. Moses. [1135–1204 a.d.] [De regimine sanitatis ad Soldanum Babyloniae.] [F. 1a:] [t]Ractatus Rabi Moysi que[m] | domino et Magnificho Sol | dano babilonie transmisit | [etc.] [F. 40a:] Laus deo et Marie uirgini. | Imprexum Florentie | apud Sanctum | Jacobum de | Ripolis. |

[40] ff 4°. Florentiae, Monasterium S. Jacobi de Ripoli, [1477.]
[Hain no. 10525.]

*259. Maimonides, R. Moses. [1135–1204 a.d.] [Aphorismi medici.] [F. 1:] Hoc in volumine hec continent[ur]. | Apho[r]ismi Rabi moysi. | Apho[r]ismi Jo. Damasceni. | Liber secreto[rum] Hipocratis. | Liber p[ro]nosticationum [Su]m luna[m] in si- | gnis et aspectu planetarum Hipoc. | Liber q[ui] dicit[ur] capsula eburnea Hipo. | Liber de eleme[n]tis siue de humana na | tura Hipocratis. | Liber de aere [et] aqua [et] regio[n]ib[us] Hip. | Liber de pharmacijs Hipocratis. | Liber de insomnijs Hipocratis. | Liber zoar de cura lapidis. | [F. 48a:] [In[sic]p[r]essum est p[r]esens volumne[m] Venetijs per.M.Joha[n]- | nem hertçog de Landoia alamanu[m] Anno iubilei. 1.500. | Die vero decimo Januarij. | Laus deo. | Registrum. | *** Finis. [Xyl. typ. insign.]

[48] ff F°. Venetiis, Johannes Hamman de Landovia, dictus Hertzog, 1500.
[Not in Hain.]

*260. Maldura, Petrus Ludovicus. [In vitam Sancti Rochi. ***] [F. 1a. tit.:] Petrus Ludouicus Maldu | ra In Uitam sancti Rochi | Contra Pestem Epidimie Apud d[omi]n[u]m dignissi | mi intercesso[r]is Unacu[m] eiusdem

officio. | [F. 12a:] Theoderici gresemu[n]di Iunio[r]is moguntini Car- | men Elegiacu[m] ad huius libri lecto[r]em in laudem | sancti Rochi. | ***

[12] ff il. 4°. [Moguntiae, Petrus Fridbergensis, 1495.]
[Hain no. 10546.]

*261. Manfredis, Hieronymus de, Medic. [1430–1493 A.D.] Liber de homine, cuius sunt libri duo. *** [F. 1a. vacat.] [F. 1b:] MEA interest magnifice ac generose Miles Iohannes d[e] bentiuoliis.| *** [F. 2a. col. 1:] LIBER DE HOMINE: CVIVS Su[n]t LIBRI DVO. PRIMVS LIBER DE | CONSERVATIOne SANITATIs | CAPTIVLVM PRIMVM DE Ca | VSIS & NATVRIS OMNIV[M] Eo | RVM QuAE SVMVNTVR IN | CIBO. QuESITA. LXX. QuAESI | TVM PRIMVM. | [F. 109–110 desideratur.]

[110] ff F°. [Bononiae, Ugo de Rugeriis, Regiensis et Doninus Bertrochus, Regiensis, 1474.]
[Hain no. 10689.]
Imperfect. ff 109–110 missing.

*262. Manilius, Marcus. [circa 9–15 A.D.] [Astronomicon.] [F. 1a:] Marci Manilii astronomicon liber primus incipit. | [F. 78a:] Marci Manilii astronomicon liber quint[us] et ultim[us] finit. |

[78] ff 4°. [Venetiis, circa 1490.]
[Hain no. 10702.]

*263. Manliis de Boscho, Joannes Jacobus de. [circa 1450–1500 A.D.] [Luminare maius.] [F. 1a. tit.:] Luminare maius. | Cinthius vt totum radijs illuminat o[r]bem. | Illustrat lateb[r]as sic medicina tuas. | [Ad finem:] Opus diligenter co[rr]ectum [et] a multis docto[r]ib[us] | examinatum. Imp[r]essum in inclita ciuitate Papie stu | dio[r]um omnium altrice per magistrum Antonium [de] | Carchano Mediolane[n]sem imp[r]esso[r]e[m] dignissimum. | Anno saluatoris nostri. 1494. ***

[90] ff F°. Papiae, Antonius de Carchano Mediolanensis, 1494.
[Hain no. 10711.]

Marsilius
  See—Ficinus Florentinus, Marsilius
Marsilius ab Inghen, Profess. Heidelb. Commentator.
  See—Aristoteles. De generatione et corruptione liber. 1480.
Martius, Galeotus
  See—Galeottus Martius Narniensis

*264. Matheolus Perusinus, Medic. et Philosoph. [–1480 A.D.] [De memoria augenda s. ars memorativa.] [F. 1a:] Tractatus clarissimi philosophi et me | dici Matheoli perusini de memo[r]ia auge[n] | da per regulas et medicinas. | [F. 5b:] Explicit tractatus de memo[r]ia editus in | Italia a d[omi]no Matheolo medicine docto[r]e | famosissimo. mo[r]tuo Anno d[omi]ni milesimo | quad[r]ingentesimo septuagesimo. | [F. 6 vacat.]

[6] ff 4°. [Argentorati, Henricus Knoblochtzer, circa 1475.]
[Copinger no. 3912.]

*265. Matheolus Perusinus, Medic. et Philosoph. [–1480 A.D.] [De memoria augenda s. ars memorativa.] [F. 1a:] §TRACTATVS CLARISSIMI PHILO | sophi & Medici Matheoli Perusini: de Memoria. | [F. 4b:] §Hec igitur sunt uiri digni medicinalia que inter | alia electissima pro seruanda memoria & ita fine[m] facio. |

[4] ff 4°. [Romae, Eucharius Silber, circa 1476.]
[Reichling no. 253.]

*266. Matheolus Perusinus, Medic. et Philosoph. [–1480 A.D.] [De memoria augenda s. ars memorativa.] [F. 1a:] §Tractatus Clarissimi philosophi et | medici Matheoli Perusini de Memo[r]ia. | [F. 4a:] §Hec igitur sunt viri digni medicinalia que | inter alia electissima p[r]o seruanda memo[r]ia: [et] | ita finem | facio. |

[4] ff 4°. [Romae, Stephanus Planck de Patavia, circa 1490.]
[Reichling no. 1570.]

Matthaeus de Lucha
  See—Lucha, Matthaeus de

267. Meffret. [circa 1430–1480 A.D.] Sermones de tempore et de sanctis. Voll. III. [Vol. I. F. 1a (c. sign. a):] Incipit p[ars] hyemalis Sermonu[m] Meffreth. al[ia]s Or | tulus regine. Prologus. | [F. 145 b. col. 2.:] Finit pars hyemalis huius operis. | [F. 146a–153b Tabulae.] | [Vol. III. F. 1a (c. sign. AA):] Prologus de sanctis in Sermones Meffret. [F. 128a col. 2.:] Expensis spectabilis viri Anthonij | kobergers Nurenbergen[sis]. XXX Salu | tis anno. Millesimo quadringentisimo octuagesimo se | ptimo. xvj. k[a]l[en]d[a]s Marcij. | [F. 129a (c. sign YYiij)-131b col. 2. tab., in cujus fine distich novem. f. g. ch. c. f. 2 col. 70l.]

[Vol. I. 153 ff. Vol. III. 131 ff.] F°. Norimbergae, Antonius Koburger s. Koberger, Norimbergensis, 1487.
[Hain no. 11004.]
[Vol. I & III in. I. Vol. II wanting.]
[Manuscript notes.]
[Illuminated initials.]

Menghus
  See—Blanchellus Faventinus, Menghus

*268. MENSA PHILOSOPHICA. [F. 1a. tit.:] Mensa philosophica. | [F. 2a:] §Incipit tabula in li | bru[m] qui dicit[ur]. Men | sa philosophica. Et | p[ri]mo ponu[n]tur tituli | p[r]imi lib[r]i. | [F. 96b:] Presens liber que[m] mensa[m] philosophica[m] vo | cant: vnicuiq[ue] p[er]utilis: co[m]pendiose p[er]tractans | in p[ri]mis q[ui]d in co[n]uiuijs p[ro] cibis et potibus su= | mendu[m] est. deinde qui sermones illis [secundu]m exi= | gentia[m] p[er]sonaru[m] habe[n]di su[n]t: et que q[ue]stiones | discutie[n]de: q[ue] insup[er] facetie siue ioci intersere[n]di | Feliciter explicit. |

[96] ff 4°. [Coloniae, Johannes Guldenschaaf de Moguntia, circa 1485.]
[Hain no. 11075.]

MERULA, GEORGIUS
See—GALEOTTUS MARTIUS NARNIENSIS

269. MESUE DAMASCENUS, JOHANNES. [777–837 A.D.] [Eadem opera cum additionibus et expositionibus aliorum.] [F. 1 vacat.] [F. 2a:] [I]N nomine | dei mise[r]ico[r] | dis cui[us] nutu [ser]mo recipit | gra[tiam] [et] doctrina p[er]fectione[m]. | *** [F. 391a:] Hoc loci consum[m]atur vniuersa opera Diui | Ioannis Mesue cum complemento *** An | no saluato[r]is cristi Iesu. M.IIIJ.LXXVIIIJ. p[er] | die kale[n]das Feb[r]uarij. Imp[r]essa venetijs op[er]e et impensis Rainaldi Nouimagij. ***

[392] ff F°. Venetiis, Raynaldus de Novimagio, 1479.
[Hain no. 11108.]

270. MESUE DAMASCENUS, JOHANNES. [777–837 A.D.] [Eadem opera cum additionibus et expositionibus aliorum.] [F. 1a. tit.:] Mesue cum additionibus Francisci de pedemontium. Et ad | ditionibus Petri de Apono. Et cum commento Dini super | Cano. generales. Et cum co[m]me[n]to Christophori de honestis| sup[er] antidotariu[m] Mesue Platearius super antidotariu[m] Nicolai | Et Saladinus de componendis medicinis. | [F. 357b:] Hic finitur Mesue cum Mundino super canoni- | bus generalibus Christofaro Geo[r]dio *** Et imp[r]essa Uenetijs per Pelegrinum de | pasqualibus de Bononia sub a[n]no d[omi]ni. 1491. *** LAUS DEO. |

[358] ff F°. Venetiis, Peregrinus de Pasqualibus de Bononia, 1491.
[Hain no. 11110.]

*271. METLINGER, BARTHOLOMAEUS. [–1490 A.D.] [Regiment der jungen Kinder.] [F. 1a:] [W]Ann nach ansehung götlicher | vnd menschlicher o[r]denung *** [F. 27b:] da | mit sich das vierd capitel endet v[o]n dar dur | ch dises büchlin Dar von got dem almechti | gen Er wurd v[o]n lob gesagt sey vnd seiner | werde[n] müter der iungfrauwe[n] marie Gesche | hen als ma[n] zalt nach xpi geburt tauset vier= | hundert vnd in de[n] LXXIIJ. jar an dem achten | den tag sant End[r]is des zwölff boten. |

[27] ff F°. [Augustae Vindelicorum, Günther Zainer de Reutlingen,] 1473.
[Hain no. 11127.]

MIRANDULAE, J.
See—PICUS MIRANDULAE, JOHANNES, Comes.

*272. MOLITOR DE CONSTANTIA, ULRICUS. [circa 1450–1500 A.D.] [De lamiis et phitonicis mulieribus.] [F. 1a.] §De lanijs (sic) [et] phitonicis mu | lieribus ad illustrissimum p[r]incipem dominu[m] Sigismundum | archiducem austrie tractatus pulcherrimus. | [Icon. xyl.] [F. 22a. l. 26.] Ex Constantia anno domini. M.CCC.LXXXIX: die | decima mensis Januarij. | §Tue celsitudinis humilis consilarius [et] seruulus | Ulricus molito[r]is de Consta[n]tia decreto[rum] docto[r]. |

[22] ff il. 7 woodcuts. 4°. [Coloniae, Cornelius de Zyrichzee, circa 1490.]
[Copinger no. 4338?]
Most famous XVth century work on witchcraft.

273. MONTAGNANA, BARTHOLOMAEUS. [–1460 A.D.] [Consilia medica.] [F. 1a. tit.:] Consilia Magistri Bartholomei Montagnane. | Tractatus tres de balneis patauinis. | De compositione et Dosi medicinarum. | Anthidotarium eiusdem. | Consilia D[omi]ni Antonii Cermisoni. | Tractatus de theriaca: a Fra[n]cisco caballo edit[us]. | [F. 401b. n. 405b:] §Hoc uolumen Imp[r]essum est Uenetijs per | Simonem de Luere Impe[n]sis D[omi]ni Andree | To[r]resani de Asula. xx. Aug, M.CCCCIC. | ***

[420] ff F°. Venetiis, Andreas Toresanus de Asula per Simonem de Luere, 1499.
[Copinger no. 4342.]
Imperfect. ff 402–420 missing.

274. MONTAGNANA, BARTHOLOMAEUS. [–1460 A.D.] [Consilia medica.] [F. 1 vacat.] [F. 2a:] §Gerardo bolderio Uerone[n]si tanq[uam] patri obseruandissi- | mo Jacobus de vitalibus B[r]ixiensis. S. P. D. | [F. 395b (c. n. 387):] §Gratias altissimo deo qui antidotis d[omi]ni magistri Bar- | tholomei de mo[n]tagnana. Et [con]seque[n]ter toti[us] huius op[er]is fi | nem i[m]ponere dedit. Ma[n]dato ac sumptib[us] nobilis viri d[omi]ni Octauiani Scoti ciuis Modoetie[n]sis. quarto nonas Au- | gusti. 1497. per Bonetu[m] Locatellu[m] Bergomensem. |

[396] ff F°. [Venetiis], Octavianus Scotus, Modoetiensis, per Bonetum Locatellum, Presbyter. Bergomensis, 1497.
[Hain no. 11552.]

275. Montagnana, Bartholomaeus. [circa –1460 A.D.] [De urinarum judiciis.] [F. 1a:] Tractatus de v[r]inaru[m]iudicijs p[er]utilis excel | le[n]tissimi viri Bartholomei de montegnana. | [F. 25b:] Imp[r]essus padue per Magistrum Matheum cerdonis de | vindischgrecz. Anno d[omi]ni. i4. 87. die vero. i7. me[n]sis feb[r]uarij. |

[26] ff 4°. [Patavii, Matthaeus Cerdonis de Windischgraez, 1487.
[Hain no. 11553.]

276. Montis, Petrus de. [De dignoscendis hominibus libb. VI.] [F. 1a. tit:] PETRVS MONTIS DE DIGNOSCENDIS HOMINIBVS | INTERPRETE G. AYORA CORDVBENSI. | [F. 228b:] CONSVMATVM EST. | Antonius Zarotus Parmensis Mediolani hoc Opus impressit Mille | simoquadringentesimo nonagesimosecundo: sexto decimo | Chalendas Ianuarii. ***

[228] ff F°. Mediolani, Antonius Zarotus, Parmensis., 1492.
[Hain no. 11608.]

Moses Maimonides
See—Maimonides, R. Moses

*277. Motis, Johannes. [circa 1300– A.D.] [Invectiva coetus feminei contra mares.] [F. 1a. tit.:] §Tractatuli duo metrici b[r]eues. quo[rum] p[r]imus | continet recommendationem seu defensio | nem mulierum contra viros seu mares. | §Secundus remedium viro[r]um contra con- | cubinas atq[ue] coniuges [et]c. | [F. 8b:] §Quinq[ue] sunr (sic) que p[er]turba[n]t | rempublica[m] siue bonu[m] co[mit]e. | ***

[8] ff 4°. Memmingae, Albertus Kunne de Duderstat, circa 1500.]
[Hain no. 11623.]

278. Nicander. [185–135 B.C.] [Alexipharmaca.]

[In- Dioscorides Anazarbeus, P. De materia medica. 1499. ff 164–172.]
[Greek text.]

279. Nicander. 185–135 B.C. [Theriaca.]

[In- Dioscorides Anazarbeus, P. De materia medica. 1499. ff. 135–164.]
[Greek text.]

*280. Nicephorus. [circa 750–800 A.D.] [Logica cum aliis aliorum operibus Georgio Valla interprete.] [F. 1a. tit.:] Geo[r]gio Ualla Placentino Interprete. | [F. 156b:] §Impressum Venetiis per Simone[m] Papiensem di | ctum Beuilaquam. 1498. Die ultimo Septembris | Cum gratia [et] p[r]iuilegio. | ***

[156] ff F°. Venetiis, Simon Bivilaqua Papiensis, 1498.
[Hain no. 11748.]

281. Nicolaus Falcutius, Medic. Florentinus. [–1412 A.D.] [Sermones medicinales septem.]

7 v. in 4. F°. [Papiae et Venetiis, 1484–1491.]
Sermo 1—Hain no. 11767. Papiae, Damianus de Confaloneriis de Binascho, 1484.
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Sermo 3—Hain no. 11768. Venetiis, Bernardinus Stagninus de Tridino de Montferrato, 1490.
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Sermo 4—De membris spiritualibus.
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282. Nicolaus Falcutius, Medic. Florentinus. [–1412 A.D.] [Sermones medicinales septem.]

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[Hain no. 11767.]

283. Nicolaus Falcutius, Medic. Florentinus. [–1412 A.D.] [Sermones medicinales septem.]

Sermo 5. [190] ff F°. Papiae, Joannes Antonius de Biretis et Franciscus de Girardengis, 1491.

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*284. Nicolaus Falcutius, Medic. Florentinus. [–1412 A.D.] [Antidotarium.] [F. 1a:] Iohannis Mesue Grabadin In | cipit Quod est aggregacio [et] an= | tidotarium electuario[r]um et co[n] | fectionum. [F. 45a:] [A]Ntidotarius Nicolai medi | cinalis cum omnibus suis | receptis Incipit feliciter. | [F. 67b:] Antidotarius medicinalis | Nicolai Explicit. | [F. 68a:] Liber seruito[r]is de p[r]eparac[i]oni | bus medicina[rum] ta[m] lapidu[m] mine= | raliu[m] q[uam] radicu[m] pla[n]ta[rum] ac etia[m] me | dici[n]a[rum] ex a[n]i[m]alib[us] su[m]pta[rum]. ***

[95] ff F°. [Argentorati, Johannes Pryss, circa 1480.]
[Hain no. 11763.]
Imperfect. ff 45 & 46 mutilated. ff 93–95 missing.

Nicolaus Praepositus, Salernitus.
See—Praepositus, Nicolaus

*285. Nider, Johannes, Ordin. Praedicat. [1380–1438 A.D.] [Tractatus de morali lepra.] [F. 1a:] Jncipit (sic) tractatus venerabil[is] magistri. Joha[n] | nis Nider ordinis p[re]dicato[rum]. De morali lepra | [O]Lim deum legim[um] [etc.] [F. 102b. l. 19:] Explicit tractatus de lepra morali. Fratris. Jo | ha[n]nis. Nyder sacre theologie professoris ordinis predicatorum. |

[104] ff 4°. [Coloniae, Udalricus Zell de Hanau, Clericus, circa 1469.]
[Hain-Copinger no. 11814.]

Nigris, Sillanus de Commentator.
See—Rhasis s. Abubecher, Mohammed, Fil.
Zachariae al Rasis. Medic.

286. Novimagio, Rudolphus de. [circa -1459 a.d.] [Legenda Alberti Magni.] [F. 1a. c. sign. a i:] Incipit p[rol]ogus i[n] legenda[m] venerabil[is] d[omi]ni alb[er]= | ti magni ordinis p[re]dicato[rum] | [F. 95b:] Et sic est finis. |

[95] ff 4°. [Coloniae, Johannes Guldenschaaf de Moguntia, circa 1483.]
[Copinger no. 4443.]

*287. Nursia, Benedictus de. [circa -1450 a.d.] Libellus de conservatione sanitatis. [F. 1a vacat.] [F. 1b:] Pulcherrimum & utilissimu[m] opus ad | sanitatis co[n]seruationem. *** Incipit foeliciter. | *** [F. 139b:] Tractatus quidam de regimine sani | tatis opera & industria Dominici de | Lapis. impendio tamen Sigismundi | a libris ciuis atq[ue] liberarii Bononien | sis feliciter finiunt. | Anno. d.m.cccc.lxxvii. |

[140] ff 4°. Bononiae, Dominicus de Lapis, 1477.
[Hain no. 11920.]

*288. Nursia, Benedictus de. [circa -1450 a.d.] Libellus de conservatione sanitatis. [F. 1a vacat. F. 2a:] § Tabula huius libri. | [F. 3a:] § Incipit libellus de conseruatione sanitatis. secun | dum ordine[m] Alphabeti distinctus. Per eximiu[m] docto | rem magistru[m] Benedictum compositus. | [F. 54a. in fine:] § Finit feliciter. [§ Registrum foliorum. |

[54] ff 4°. [Romae, Stephanus Plannck de Patavia, circa 1490.]
[Copinger no. 4445.]

*289. Nursia, Benedictus de. [circa -1450 a.d.] Libellus de conservatione sanitatis. [F. 1 vacat. F. 2. tab. F. 3a:] § Incipit libellus de conservatione sanitatis: secun | -dum ordinem alphabeti distinctus: per eximium do | ctorem magistrum Benedictum compositus. | [F. 54a:] § Finis. § Impressum Rome per Magistrum Stephanum Planck An | no domini. m.cccc.xciij. Quarto Non[o] Maij. |

[54] ff 4°. Romae, Stephanus Plannck de Patavia, 1493.
[Hain no. 11922.]

*290. Ockam, Guilielmus Ordin. Minor. [1280–1348 a.d.] Summulae in Aristotelis physicam. [F. 1a. tit.:] Uenerabils (sic) inceptoris fratris Guiliemi (sic) de | villa Hoccha[m] Anglie. achademie No[m]i[n]alium | Principis Su[m]mule i[n] lib. physicorum adsunt. | [F. 1b:] Frater Marcus Alexandreus de Beneuento ordinis Celestinorum Domino Magistro Ale | xandro de Achillinus Bononiensi artium et medicine doctori optimoque philosopho. S. | [F. 2a (c. sign. a. i i):] Prohemium. | [F. 46b. col. 2. post registr.:] Expliciunt auree su[m]mule in lib. physicorum | Fratris Guilielmi de villa Occham Anglie. | Academie Nominalium principis. Sacrarum lit- | terarum p[ro]fessoris; ex ordine minorum; Correcte vi | gili studio ac labori Uenerabilis patris fratris | Marci Alexandrei de Beneue[n] to Co[n]gregatio | nis Celestinorum: ordinis diui Benedicti artium | bacchala | rij.

Impresseum Bononie impensis | Benedicti Hectoris Bononiensis Uiri soler | tissimi. 1494. idibus dec[em]bris. Jo. Bentiuolo | secu[n]do merito regnante. | [Insign. typogr. c. litt. B. F. 47a r. ch. epigrammata duo. f. g. ch. c. f. 2 col. 46 l.]

47 ff. F°. Bononiae, Benedictus Hectoris, Bononiensis, 1494.
[Hain no. 11951.]
[Proctor no. 6629.]

*291. Orbellis s. Dorbellus, Nicolaus de Ordin. Minor. [-1455 a.d.] [Logica.] [F. 1a. tit.:] Logica Magistri Nicolai de Orbellis una cum | textu Petri hyspani. | [F. 134a:] Explicit Logica magistri Ni | colai de o[r]bellis vna cum te- | xtu Petri hispanus feliciter. | Imp[r]essa Uenetiis per Al- | bertinu[m] Uercellensem: die. x. | Marcii. m.ccccc. | Registrum. | abcdefghiklmnop- | qr. Omnes sunt quarter | ni p[ra]eter r que est ternus. |

[134] ff diag. 4°. Venetiis, Jacobus Rubeus (Rouge, Rossi) Gallicus, 1500.
[Hain-Copinger no. 12052.]

*292. Ortolff von Bayrlandt. [circa 1430–1480 a.d.] [Arzneybuch.] [F. 1a:] Hie hebt sich an das register des | nachuolgenden artzneipuchs. | *** [F. 4b:] Nach Christi vnse[r]s lieben herre[n] gepurt als man zalt Tau= | sent vierhundert vnd sibenvndsibentzig Iar *** Nürenberg Ist di[eses] Artzneipuch mit sunderm fleis durch | Anthonij koburger Burger daselbs ged[r]ückt *** [F. 84a. l. 7:] ein ende. |

[84] ff 4°. Norimbergae, Antonius Koburger s. Koberger, Norimbergensis, 1477.
[Hain no. 12112.]

*293. Paulus Venetus seu de Venetiis, Theolog. Patav. [1370–1428 a.d.] [Expositio librorum naturalium Aristotelis.] [F. 1 vacat. desider.] [F. 2a:] [P]Lurimo | ru[m] astri- | ctus p[re]cibus: quo[r]u[m] p[ri]de[m] mee i[n]troductio | nis *** [F. 215b:] Explicit sexta [et] vltima pars su[m]me natu- | raliu[m] *** [con]fecto Uenetijs imp[r]essione[m] habuit i[m]pen- | sis Ioha[n]nis de Colonia socijq[ue] eius Io | hannis ma[n]then de Gherretzem. Anno a | natali ch[r]istiano m.cccc.lxxvi. |

[223] ff F°. Venetiis, Johannes de Colonia et Johannes Manthen de Gherretzem, 1476.
[Hain no. 12515.]

294. Paulus Venetus seu de Venetiis, Theolog. Patav. [1370–1428 a.d.] [Expositio librorum naturalium Aristotelis.] [F. 1a:] Sumule naturaliu[m] mag[ist]ri Pauli ueneti ordi[ni]s | heremitaru[m] sancti augustini physico[rum] liber i[n]cipit. | [F. 161a. col. 2.:] Explicit ultima pars su[m]me naturalium edita per | Reuerendu[m] theologie famosissimu[m] professorem | Magistru[m]. Paulu[m] de uenetijs ordinis heremi | taru[m] sanctissimi Augustini. | Impressa Mediolani. p[er] Cristofo[rum] Ualdarfer | Ratisponensem. Anno domini. m.c.c.c.c. | lxxvj. Die xvij. mensis Julij. | [F. 162a:] Incipit tabula huius libri ualde utilis. | [F. 166a. col. 2.:] Et sic est finis ad laudem dei cui sint gratie. Die | xvij. Julij 1476. |

[166] ff F°. Mediolani, Christophorus Valdarfer Ratisponensis, 1476.
[Hain no. 12516.]

Pedemontio, Fr.
See—Franciscus de Pedemontio
Pergamensus, N.
See—Dialogus creaturarum

*295. Petrarca, Franciscus. [1304–1374 a.d.] [De remediis utriusque fortunae.] [F. 1a (c. sign. 2):] § Tabula Rubricarum praecedentis libri. etc. [F. 3b:] § Explicit Tabula Liber secu[n]dus. d. Fra[ncisci] Petrarcae de remediis uttiusq[ue] (sic) fortunae. [F. 4a:] § Ad magnificum splendidissimumq[ue] uirum Marchisinum stangham; Ducalem Se | cretarium Nicolai lucari Cremonensis Epistola. | [F. 5a:] § Francisci Petrarcae poetae oratorisq[ue]. Clarissimi de Remediis utriusq[ue] fortu- | nae. ad Azonem. Liber primus. Incipit. | [F. 164b:] § Accipe tandem candidissime lector Diuinum Francisci Petrarcae: opus | Nicolai lugari i[n]dustria sollerti Nitidissimu[m]; Bernardini de misintis Papie[n]sis | ac Caesaris Parmensis sociorum diligenti opera. Impressum Cremonae. Anno | Incarnationis d[omi]nice. 1492. die 17. mensis Nouembris. | [Typ. xyl. c. lit.:] B M C P.

[164] ff. 4°. Cremonae, Bernardinus de Misintis de Papia et Caesar Parmensis., 1492.
[Hain-Copinger no. 12793.]

*296. Petrarca, Franciscus. [1304–1374 a.d.] Epistoles familiares [F. 1a tit.:] FRANCISCI PET. EPISTOLE FAMILIARES. | [F. 1b:] Sebastianus Manilius Romanus; Dominico Bolano Veneto Patri | tio; Equiti aureato: Philosophiae Doctori: ac Comuni Venetorum aduo | catori Salutem plurima[m] dicit. [F. 2b–6b tab. F. 7a (c. sign. a):] AELIMATISSIMI POETAE: ATQuE ORATORIS NON IN- | CVLTI: FRANCISCI PETRARCAE ARETINI EPISTOLA. | RVM DE REBVS FAMILIARIBUSLIBER PRIMVS FOELI- | CI AVSPICIO INCIPIT AD SOCRATEM SVVM. | [F. 123b (c. n. 117):] Impresso in Vrbe Venetiarum operi per Iohannem & Gregorium de Gregoriis Fratres forlix imponitur finis. Castigatum est auté qua | fieri potuit diligentia a Sebastia[n]o Manilio Romano Ciui; Viro hand | illiterato. Humanae restaurationis anno Millesimo. cccc.lxxxxii. Idi | bus septe[m]bris: Augustino Barbadico Serenissimo Venetiaru[m] Principe | rempublicam tenente. | [Registr. ULt. f. a. insign. typogr. c. litt. Z. G. 4. r. ch. c. f. et ff. n. 39–40 l.]

124 ff 4°. Venetiis, Johannes et Gregorius de Gregoriis de Forlivio, 1492.
[Hain-Copinger no. 12811.]

Petrus de Argellata.
See—Argellata, Petrus de
Petrus Hispanus
See—Hispanus, Petrus, postea Johannes xxi. Papa
Petrus de Abano
See—Abano s. Apono, Petrus de

*297. Peyligk Czizensis, Johannes. [1474–1592 a.d.] [Compendium philosophiae naturalis.] [F. 1a. tit:] Philosophie Naturalis | Compendiu[m] Lib[r]is phi | sico[r]um *** [F. 97b:] *** Imp[re]ssu[m] est opus istud in insigni oppido Liptzensi ope- | ra [et] solertia Melchiar Lotter Anno salutifere incarnat[i]o[n]is Mil | lesimo quad[r]ingentesimononogesimonono p[r]idie idus septe[m]b[r]is. |

[97] ff F°. Lipsiae, Melchior Lotter, 1499.
[Hain no. 12861.]

(*To Be Continued*)

[From Joannis Baptista: Dr. Humina Physiognomonia: Hanoviae, 1593.]

EDITORIAL

ALPHONSE LAVERAN

ON November 6, 1930, an interesting ceremony was observed at the Val-de-Grâce military hospital in Paris, in honor of the semi-centennial of the discovery of the parasite of malaria by Alphonse Laveran. It was while serving as a surgeon in the French army in Algiers that Laveran on November 6, 1880, discovered the organisms in the blood of a soldier suffering from malaria. When we consider the enormous progress made in the diagnosis and treatment of malaria by Laveran's discovery, upon which all subsequent studies of the paludal fevers have been based, it is not possible to overestimate its importance. Some years later Laveran announced his conviction that the parasite must pass through a stage of life elsewhere than in the human body, but it remained for Ronald Ross of the British Indian Medical Service to demonstrate that the mosquito was the intermediate host of the organism discovered by Laveran.

In 1907 Laveran received the Nobel Prize, and in connection with the celebration of the centenary of the French conquest of Algiers a monument to his memory was erected at Constantine. The ceremonies in Paris were conducted under the auspices of the Societé Amicale des élèves et anciens élèves du Val-de-Grâce, where he served as a professor for many years, before going to the Pasteur Institute on his retirement from the Army. In addition to unveiling a bronze medalion of Laveran, the little square in front of Val-de-Grâce was given his name. His widow, who was present at the ceremony, has given many of his instruments and manuscript notes to Val-de-Grâce, where they are carefully placed in a suitable location.

BOOK REVIEWS

John Marsh, Pioneer, the Life Story of a Trail-Blazer on Six Frontiers. By George D. Lyman. Illus. New York, Charles Scribner's Sons. 1930.

In the Annals of Medical History, 10: 460, 1928, Dr. Lyman published a thrilling true story "The Sponge," a recital of one of the most stirring and historic murder trials of the West. He is well-known as a delver in untrodden bypaths of history and the present volume will add greatly to his previous laurels.

Intended for the ministry, Marsh after leaving Phillips Academy, Andover, went to Harvard College, from which he received the degree of B.A. in 1823. While in college he had decided to become a physician instead of a minister and had entered on some preliminary studies with that end in view. He took courses in anatomy, and did some medical work with Dr. John Dixwell in Boston. Just after he had finished his Harvard course he received an offer to go out to Fort St. Anthony, at the junction of the Mississippi and Minnesota rivers in the Territory of Michigan as tutor to the son of Colonel Josiah Snelling, the commander. John jumped at the opportunity to earn some money which would enable him to return and finish his medical course. At Fort St. Anthony John Marsh entered on his Western career, which was terminated by his murder in 1856. At the Fort he opened the first school in Minnesota, acted as Indian Agent, acquired a knowledge of Indian languages, and became influential in negotiations between the Indians and the United States officials. He fell in love with an Indian girl who became the mother of a boy by him. The romantic story of this love affair is too long to be told but it is one of the most touching and beautifully written things in Dr. Lyman's book. Marsh and Marguerite remained faithful to each other until her death. Years after Marsh had been told that his boy, whom he had left in Illinois when he went to California was dead, the son, a grown man turned up at his father's ranch. When Marsh died Charlie inherited half the fortune his father had accumulated, and he succeeded in running down the murderers who had killed him. Marsh's dealings with the Indians at the Fort and at Prairie du Chien are delightfully told. Unfortunately he was caught selling arms to them and a warrant was issued for his arrest. Marsh made his escape in a canoe down the Mississippi and, after many vicissitudes including captivity by the Indians, reached California by the Santa Fé trail. Here he began a new life. He had kept up a correspondence with his family in New England but had always posed to them as a single man, never mentioning Marguerite or Charlie. No one in California knew anything of his past, and the Americans in the province were most of them too anxious to keep their own past silent to ask questions of a newcomer.

John Marsh, as so many of his contemporaries who practiced medicine, never received a medical degree. When he arrived in the Mexican province of California he learned of the law which required every foreigner to register his occupation and declare his intentions in coming into the province. Thereupon he appeared before the *ayuntamiento* and declared that he was a physician and desired to practice medicine in California. As his credentials he presented his Harvard diploma of B.A. Fortunately the officers were unable to translate it, so they took his word for it as a medical diploma and granted him the right to practice in California. Thenceforth he was known as Dr. Marsh and he soon acquired a large and lucrative practice. In order to acquire title to a ranch which he purchased it was necessary for him to become a Roman Catholic and he did so, receiving the name Juan Maria, and was henceforth known as Don Juan. His ranch was in the San Joaquin Valley, near Mount Diablo, with his only neighbors some fifteen miles away. How he prospered, married a school-teacher, Abby Tuck, who had come to California with a party of Baptist missionaries, had a daughter by her, built a wonderful mansion, was rejoined by his son Charlie whom he had supposed dead and was influential in ousting the Mexicans and securing California for the United States must be read in Dr. Lyman's pages to be appreciated. The dramatic recital of his murder brings his story to a close. His two children, Charlie the half-breed, and Alice, the daughter of Abby Tuck, shared the large estate left by their father.

The writing of this work was a truly wonderful piece of research, extracted from family records, municipal archives, legal documents, and many other sources. It is a thrilling story and a real contribution to Western history. Marsh did not contribute anything to medical science, and he did many things which were contrary to good manners and morals, but his life story is one of the best thrillers we have ever read. We recommend it to lay as well as professional readers and feel sure none will close it without a feeling of sympathy for its tough hero.

A Chart to Illustrate the History of Biochemistry and Physiology. By Joseph Needham, Fellow of Caius College, Cambridge. Copies may be obtained from the University Press, Cambridge, England.

This comprehensive chart on two large sheets covers the history of biochemistry and physiology from the earliest times to the present day and will prove an invaluable aid to the teacher of either subject who wishes to give his students a historic background for their work, or to the lecturer on medical history who can with this aid visualize for his students the period with which he may be dealing. The author shows not only a complete familiarity with his subject but an historic sense. Accompanying the strictly necessary parts there are placed all the chief events in current history. The subject is treated in decades, indicated by large figures, on the margins of the chart. It reminds one very much of the magnificent and rare "Atlas of General History" of Les Cases. The author shows much discrimination in his selection of facts and commendable accuracy. We can heartily recommend the results of his labors to all students of the history of medicine.

History of Medicine in Nebraska. By Albert E. Tyler, m.d., Editor, Ella F. Auerbach, Compiler. Illus. Omaha, Magic City Printing Co., 1928.

As usual in most of our Western country the earliest physicians to practice in Nebraska were army surgeons who accompanied the troops which were stationed in garrisons to guard the settlers from the Indians. In 1819 two army surgeons, Thomas G. Mower and John Gale, came with their regiments to Nebraska. They had a hard time battling with scurvy which prevailed in the garrison and was remarkably fatal. Dr. Tyler reprints their report, a most interesting document. Mower continuing his army career left Nebraska, but Gale married an Indian girl, whom he deserted after the birth of a daughter. The deserted wife married a widely known trader Peter Sarpy. The daughter married a half-breed French-Indian, Joseph La Flesche. Their daughter Susan La Flesche graduated from the Woman's Medical College of Philadelphia, and returning to Nebraska practiced medicine among both the Indians and Whites. She raised the money to build the first hospital at

Walthill, which remains as a memorial to her. There is but little to record of the pioneer physicians who came along with the settlers. Many of them were "Docs," dubbed so by their neighbors because of claimed or supposed skill in healing, though there were a few who had really a medical degree. Among them should be mentioned Dr. George L. Miller, who graduated from the College of Physicians and Surgeons of New York in 1852. Miller was deflected from medicine, however, and entered public life becoming one of the most influential politicians in Nebraska.

An interesting chapter is devoted to the women physicians who seem to have had a proportionally large representation among the early practitioners in Nebraska. The first medical journal established in Nebraska was the *Omaha Clinic*, established in 1888. *The Western Medical Review* was founded by George H. Simmons in 1896, who remained with it until he assumed the editorship of the *Journal of the American Medical Association*. The first medical school in Nebraska, Omaha Medical College, was incorporated in 1869. Dr. Tyler's work continues its records down to the present time. This book adds one more to the valuable series of publications which have recently appeared in various parts of the United States, by which an effort is made to preserve records of historical value before it is too late to recover them. Dr. Tyler has performed a worthy service. His work is well printed and copiously illustrated. It lacks an index which would add greatly to its usefulness as a work of reference.

A TEXTBOOK OF SURGERY. By John Homans, M.D. Compiled from Lectures and Other Writings of Members of the Surgical Department of the Harvard Medical School. With a Special Bibliographical-Index, and with Illustrations by Willard C. Shepard. Springfield, Ill., Charles C. Thomas, 1931.

It is refreshing to consider a textbook which though admirably adapted to its purposes in the medical school presents original features which are a marked departure from the ordinary characteristics of such works and entitle it to consideration in the columns of a periodical devoted to medical history. Dr. Homan's book is a composite volume based on the lectures and writings of members of the surgical department of the Harvard Medical School. Needless to say the various subjects are treated in the very best way by the twenty-three authors who have contributed to the volume, all of whom are authorities on the subjects with which they deal. Intended primarily for students the text treats these subjects in the most practical manner and with the utmost clarity. Although concisely written each article presents its subject matter with admirable thoroughness and well-rounded particularity. The result is a work which will prove a valuable textbook not only to the students in the medical school to which its writers belong but in any medical school throughout the country. There are two features which make an especial appeal to those interested in medical history. The first is that each chapter is preceded by a brief historical sketch of the subject. These sketches are necessarily concise but they bring out the chief historical events leading up to our present knowledge of the matter under consideration and illustrate the steps by which that knowledge was obtained. Such presentations cannot fail to have a most stimulating effect on the mind of the student. The other noteworthy innovation is a most comprehensive "Bibliographical Index" arranged alphabetically in parallel columns, the author's name in the first column, the subject in the second, and the reference in the third. This makes it possible for the reader to look up the sources from which the text is drawn in the shortest possible time, and is an idea which it is to be hoped will be generally adopted in the future. Most of the many excellent illustrations are drawn from original sources. An excellent index concludes the work. Although the book contains over 1150 large pages it is so well made that it is easily held and the printing is so good that it is a pleasure to read it.

HIERONYMUS FRACASTORIUS. Contagion, Contagious Diseases and Their Treatment. Text, Translation and Notes. By Wilmer Cave Wright, PH.D., Professor of Greek in Bryn Mawr College. New York, G. P. Putnam's Sons, 1930.

Although this is Number 2 of the "History of Medicine Series," issued under the auspices of the New York Academy of Medicine, it is the first of the Series to make its appearance and if, as we hope and have reason to believe, those which follow will be up to its standard the Series will be of splendid service to the study of the history of medicine in this country.

It has only been since the knowledge of bacteriological agencies in the transmission of diseases that justice has been done to the sixteenth century mathematician, philosopher and physician who first conceived the idea that contagious diseases were transmitted by minute organisms, invisible to the observer, and capable of acting in different ways. The first to call attention to the views of Fracastorius was Haeser, in 1882, and since then Massolongo, the Singers, and A. C. Klebs have studied them more fully. This neglect is probably attributable to the fact that until the science of bacteriology was developed the full importance of the speculations of Fracastorius could not be appreciated, also his eminence as a mathematician tended to overshadow writings which, until their importance was shown by the discovery of bacteria, might be classed with the other less useful speculations of his contemporaries. Fracastorius wrote in Latin and though portions of his work have previously been translated into French, German and English, this is the first complete translation to appear in a modern tongue. In the Introduction Dr. Wright gives a very adequate summary of the life of Fracastorius and the conditions under which he wrote. He quotes Garrison's statement of Fracastorius' contribution to the study of contagion, that he divided infectious diseases into those (1) infecting by immediate contact, (2) infecting through intermediate agents like fomites, (3) infecting at a distance or through the air. These certainly are very different from the ideas in vogue among his contemporaries on the origin and transmission of infectious diseases. But to comprehend the true originality and importance of Fracastorius his own writings should be read, and Dr. Wright has rendered an invaluable service in presenting not only an excellent translation but a correct version of the original text. There are a number of valuable notes appended, an excellent bibliography, and a good index.

SELECTED READINGS IN THE HISTORY OF PHYSIOLOGY. Ed. by John Farquhar Fulton, M.D. Formerly Fellow of Magdalen College, Oxford. Sterling Professor of Physiology, Yale University. Springfield, Ill., Charles C. Thomas, 1930.

Many teachers in the various branches of medicine try to stimulate their pupils' interest by diverting their attention to the historical background of medical subjects but Prof. Fulton's work should be appreciated by teachers of physiology as much as by all students of the history of medicine. Like Long's "Readings in Pathology," and Camac's "Epochmaking Contributions to Medicine, Surgery and the Allied Sciences," this book furnishes access to original sources concerning noteworthy discoveries, which it would be impossible for the student or teacher to obtain otherwise. Prof. Fulton has arranged his material in chapters according to subjects, general principles, the circulation of the blood, the capillaries, respiration, digestion, the central nervous system, and lastly a chapter on miscellaneous subjects, such as metabolism, the suprarenal capsules, pancreas, etc. Under each subject the readings from the original texts dealing with it are arranged chronologically. Each reading is accompanied with notes and commentaries, and the extracts are sufficiently full to give the complete sense of the author's idea on the subject. The readings have been chosen with evident care and although Fulton especially disclaims that his book is to be regarded as a history of physiology, we do not know where one could find a better guide to the study of the development of that science. The transcriptions have been made from the earliest editions of the works in which they appear and when these were in Latin or a foreign language use has been as far as possible of a contemporary translation into English. A sufficient bibliography accompanies each transcription. Many of these original descriptions of great discoveries are most fascinating reading, notably those of Aselli and Malpighi. The readings extend from Aristotle to the present time, including extracts from the writings of Sir C. S. Sherrington and Harvey Cushing.

The illustrations including portraits, facsimiles of apparatus and experiments, are particularly well chosen and reproduced. A first class index both to persons and subjects concludes this most delightful volume, which we consider a fitting companion for Sir Michael Foster's "Lectures on the History of Physiology.'›

The Papyrus Ebers. Translated from the German Version. By Cyril P. Bryan. With an Introduction by Prof. G. Elliot Smith. Illus. London, Geoffrey Bles, 1930.

This is the first attempt at an English version of the famous Papyrus Ebers. It is not made from the original manuscript but from the German translation of Dr. Joachim. It is not a complete translation of the latter but contains the chief matter of medical importance and is so subdivided under different subject headings as to render it a useful and compendious guide to the most ancient and famous of all medical texts. Professor G. Elliot Smith has contributed a valuable Introduction, condensing some of the results of his most noteworthy researches on the diseases of thousands of mummies studied by him. He reproduces some illustrations portraying various pathological conditions from which these dead Egyptians had suffered when living more than 5000 years ago, fractures, necrosis of the mastoid, vesical calculus, gallstones, etc. Calcareous disease of the arteries was common, tuberculous disease of the bones was rare but occasionally found, and there were several cases of cancer.

Until the very recent translation of the Edwin Smith Papyrus by Prof. J. H. Breasted there had been no previous rendering into English of either of these two wonderful documents on the medicine of ancient Egypt. The translation of the Ebers Papyrus by Joachim into German was, of course, much used by English and American students of medical history, but even that version was not free from errors. This rendering by Bryan is excellent as far as it goes but it would be a fine thing to have an English translation of the Ebers Papyrus to compare with and study in connection with the splendid translation by Breasted of the Smith Papyrus.

In the present book Bryan summarizes all the various diseased conditions mentioned in it. He then takes up the remedies in separate chapters; Mineral, Plant and Organic Remedies. The last-named were especially popular, no less than forty-one different animals being utilized to aid in the pharmacopeia of the Papyrus. Medicines were made from practically every structure, organ and excrement, and in most instances the medicine is equally nauseating, indecent and useless. The following chapters deal with the diseases of the various organs and systems of the body. One of the most interesting chapters is that which deals with the Egyptian theory of the circulation. The one thing in which it is correct is placing the heart as the center from which all the vessels course to the various parts of the body; for the physician, "Everywhere he feels his Heart because its vessels run to all his limbs. Therefore it is called the center of the vessels to all the limbs." But unfortunately the rest of the section devoted to the circulatory system is a farrago of nonsense. It would be foolish to attempt quotation of the numerous prescriptions and remedies advised in these pages. The translator has interspersed comments which are both amusing and learned and we can assure the reader some entertaining as well as profitable hours in their perusal.

Francis R. Packard.

The Story of a Surgeon. By Sir John Bland-Sutton, Bt., f.r.c.s., Vice-President and Consulting Surgeon to Middlesex Hospital. With a Preamble by Rudyard Kipling. Illus. Boston, Houghton, Mifflin Co., 1930.

Few books are adorned by so choice a foreword as the "Preamble" with which Rudyard Kipling has graced this record of the life of his distinguished friend. Delightfully written in quaint odd English it bestows the title of "The Story of a Hospital" on the autobiography of a man much of whose life was given to the service of the Middlesex Hospital, with which institution his name will always be associated.

Bland-Sutton has been for so many years one of the best known surgeons and teachers of surgery in London that some of his many admirers in the United States will be amazed to learn of his many activities in other fields. As an anatomist, and especially as a comparative anatomist, his achievements have been somewhat overshadowed by his renown as a surgeon. Like his great prototype, John Hunter, he developed at an early age a veritable passion for the study of the anatomy of all living animals, and also their pathology. His many hours passed in the dissecting room at the London Zoo were far from wasted. Even his great work on "Tumors" probably owes much to these researches. In the course of his long life he has had not only many curious and interesting experiences but he has sought them out, and his brief recitals of his various travels in Africa, Egypt and Russia show how much a keen observer can glean from such journeyings. Not the least interesting portions of the book are his anecdotes of the many distinguished persons with whom he has worked or been brought in contact. Entering the profession before the principles of antisepsis and asepsis had been established he has lived to see their triumph. He was active in the early days of gynecology, the days of Lawson Tait and Spencer Wells, and he was one of the chief factors in establishing that branch of surgery on a scientific basis, His reminiscences of Pasteur, Lister. Sir Frederick Treves, and other of the great men who were his older contemporaries are historic mementos of great value.

The book is full of little asides on various subjects in natural history which are as charming as the somewhat similar sketches of Frank Buckland or Gosse.

Lastly this is a modest autobiography. The many honors which have been conferred upon its author are referred to in only the most casual manner, if at all. This book will be a solace to the older members of the profession and a stimulus to the younger.

Francis R. Packard.

History of the Orleans Parrish Medical Society. 1878–1928. By A. E. Fossier, a.b., a.m., m.d. Illus. with Views of Meeting Places and Portraits of Members. Privately printed. 1930.

This is an interesting record of the activities of a medical society which has numbered many of the most prominent medical men of the South in its ranks. It is a useful compilation because of the accuracy and thoroughness with which the editor has performed his task. Although many of the persons who figure in its pages are yet alive nevertheless "do it now" is a good motto for adoption for any organization as regards the writing of its history. It is sad to think how much knowledge of the past history of organizations and the men who participated in their origin and growth has been irretrievably lost because of the fact that someone holding the knowledge and having interest in the matter was unwilling to write it up while the original records were still obtainable.

Dr. Fossier's material is well arranged and he has succeeded in making what might prove an uninteresting accumulation of facts, good reading.

Francis R. Packard.

Pädiatrie in Hellas und Rom. By Dr. med. Sophokles Ghinopoulo, Jena, Gustav Fischer, 1930.

This is a valuable monograph dealing with the writings of the Greeks and Romans on diseases of children. Those who read English only will find the essentials of Greco-Roman pediatrics in Rurhäh's classical work, "Pediatrics of the Past," (Hoeber, N. Y., 1925).

David Riesman.

Albrecht von Haller. By Stephen d'Irsay. Arbeiten des Instituts für Geschichte der Medizin an der Universität, Leipzig. Vol. 1, Leipzig, Georg Thieme, 1930.

Like Boerhaave and Goethe, Haller had an extraordinary reputation during his lifetime. The story is told that pirates one day seized an English ship on which there was a case of books destined for Haller. When the captain of the pirate ship observed this he dropped the box at the next port so that it might be forwarded to its destination as he could not bear the thought of distressing so distinguished a scholar as the great Swiss scientist.

D'Irsay's monograph is not a biography; it is a philosophical disquisition on Haller's position in the history of scientific thought, with an astounding grasp of the whole biologic literature, continental as well as English. D'Irsay traces the evolution of anatomic thought, indeed of thought in general, of the concept of irritability with which Haller's name will ever be connected, and of chemical ideas in the explanation of vital processes the growth of which was greatly resisted by Haller's forceful influence. It is difficult to comprehend how Haller with his profound insight could maintain that the salivary, gastric and pancreatic juices were merely diluents and had none but mechanical properties. Haller's and Voltaire's Weltanschaungen are interestingly contrasted; the great thought-liberating influence of the Encyclopedists is also pointed out.

There are few books of similar small compass in which so much historic, philosophic and medical knowledge is crowded. A preface by Professor Sigerist and a selected bibliography of the works of Haller and of Halleriana add to its value.

David Riesman.

Historische Studien und Skizzenzu Natur- und Heil Wissenschaft. Festgabe Georg Sticker, Würzburg, zum Siebzigsten Geburtstage dargeboten Mit einem Bildniss. Berlin, Julius Springer, 1930.

The Germans are a sentimental people. They love to celebrate the important anniversaries of their great and near great with Festschrifts and other appropriate tributes. Nearly every professor receives such an honor on his seventieth birthday. If we in America should ever acquire the Festschrift habit the already overburdened book presses would have to double their output for in this country the professor species is represented by wellnigh innumerable specimens.

Georg Sticker is professor of the history of medicine in Würzburg. The present Festschrift honoring his seventieth birthday contains besides a dedication by Karl Sudhoff a respectable series of interesting though disconnected articles.

Darmstädter and von Brunn deal with Paracelsus; Diepgen writes on Albrecht von Haller; others on Oken, Carus, Goethe, Johannes Müller, Lessing and Herder. Wieleitner gives a brief account of the discovery of the Babylonian Sexagesimal system, and Sudhoff discusses medieval texts on the bubonic plague. A bibliography of Prof. Sticker's writings and a synopsis of his lectures beginning with 1895 and ending with the summer of 1930 complete the volume.

David Riesman.

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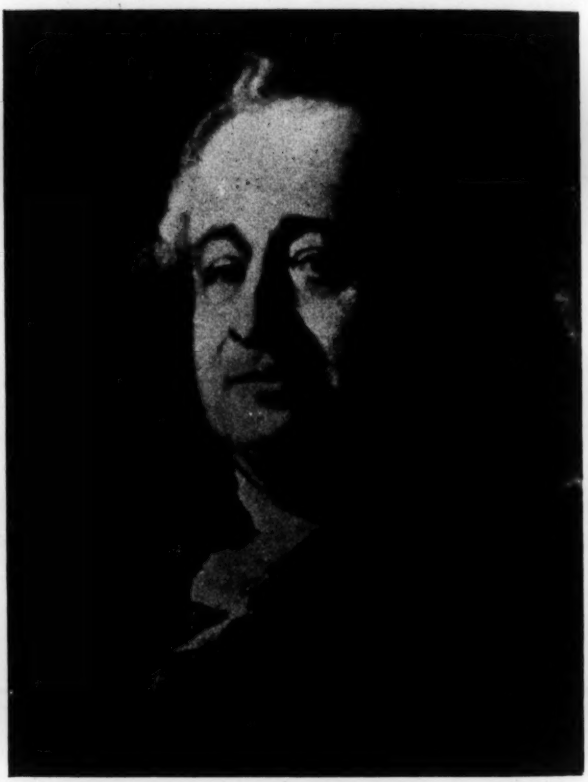

SAMUEL BROWN
[1769-1830]